CUSHMAN
A Textron Company

28984

PARTS & MAINTENANCE MANUAL

SPRAYTEK®
DS300
SPRAYER

Model 898693
SUZUKI 970 LIQUID COOLED GASOLINE ENGINE

Always Think Safety!

Thank you for purchasing a Cushman, Textron product. You are one of our many customers who have voted their confidence in our company by purchasing our products.

This is one of the best designed and built pieces of commercial industrial and turf equipment available. Many safety features have been designed and built into this product. Please ***DO NOT*** **remove or defeat any safety features** as they were installed for your protection.

The useful life and good service you obtain from your vehicle depends to a large extent on the way it is **maintained and operated.**

Treat your equipment properly, lubricate and adjust it as instructed in this manual and it will give you many years of reliable service.

See your Cushman, Textron dealer for service and parts. He stocks genuine Cushman, Textron parts manufactured with the same precision and skill as the original parts.

Cushman Inc., A Textron Company, reserves the right to make changes at any time, without notice, in specifications and models and also to discontinue models and the accessories designed to be used on these models. The right is also reserved to change specifications or parts at any time without incurring any obligation to equip same on models manufactured prior to date of such change.

While the information contained in this parts manual is based on the latest product information available at the time of publication, the continuing accuracy of this parts manual cannot be guaranteed.

WARNING

- **When replacement parts are required, use genuine CUSHMAN parts or parts with equivalent characteristics including type, strength and material. Failure to do so may result in product malfunction and possible injury to the operator and/or bystanders.**

Illustrations in this manual are a reference guide for parts identification only. Since these illustrations may not depict actual positioning of component parts, they should not be used as an assembly diagram. Doing so may result in improper assembly leading to sudden failure.

MODIFICATIONS AND ACCESSORIES

Factory installed modifications and accessories are available for use on this vehicle.

Read and understand all literature before attempting to operate this vehicle or any attached equipment.

NOTICE

- Some vehicles may be equipped with special options that are not serviced by Cushman Inc.
- The addition of accessories not of manufacturer's design may result in erratic vehicle operation, improper battery charging and discharging, and failure of vehicle components.

Direct any inquiries to:
Customer Service Department
P.O. Box 388
Augusta, GA 30903-0388 USA

WARNING

- **Altering this equipment in any manner which adversely affects the equipments operation, performance, durability or use, may cause hazardous conditions.**

IMPORTANT!
THIS EQUIPMENT SHOULD NOT BE MODIFIED OR ADDED TO WITHOUT THE MANUFACTURER'S AUTHORIZATION.

SPECIFICATION INFORMATION

All information contained in this manual is the latest available at the time of printing. Cushman Textron reserves the right to make changes at any time without notice.

NOTICE

- After you identify a part by the reference number and the six digit cushman part number, ***always read the description of the part to be sure it is what you want.***

SDI ACCESSORIES AVAILABLE FOR USE WITH THE SDI SPRAYER

Hydraulic Pump Drive	**Part No. 895064**
5th Wheel Hydraulic Fitting Adapt.	**Part No. 895065**
Manual Boom Control	**Part No. 895066**
5th Wheel Manual Boom Control	**Part No. 895067**
5th Wheel Motorized Boom Control	**Part No. 895068**
Raven SCS330 Sprayer Control	**Part No. 895069**
Raven SCS330 5th Wheel Sprayer Control	**Part No. 895070**
Raven SCS440 Console	**Part No. 895071**
Transducer Speed Sensor	**Part No. 895072**
Driveshaft Speed Sensor	**Part No. 895073**
Radar Gun Speed Sensor	**Part No. 895074**
Arm Rest Mounting Bracket	**Part No. 895075**
Dash Handrail Mounting Bracket	**Part No. 895076**
15 ft. 9-Nozzle Economy Boom	**Part No. 895077**
15 ft. 18-Nozzle Economy Boom	**Part No. 895078**
20 ft. 12-Nozzle Economy Boom	**Part No. 895079**
15 ft. 9-Nozzle Deluxe Boom	**Part No. 895080**
15 ft. 18-Nozzle Deluxe Boom	**Part No. 895081**
20 ft. 12-Nozzle Deluxe Boom	**Part No. 895082**
20 in. Ground Contour Wheel Kit	**Part No. 895083**
10 in. Ground Contour Wheel Kit	**Part No. 895084**
Electric Lift Actuator Kit	**Part No. 895085**
15 ft. Shielded Boom	**Part No. 895086**
Electric Lift Kit	**Part No. 895087**
Storage Stand	**Part No. 895088**
175 Gallon Tank	**Part No. 895089**

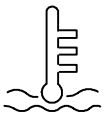
Also available is an **electric** and a **manual Hose Reel Kit.**

Contact SDI directly at:
Phone (559) SDI-5555 **or Fax** (559) SDI-5591

OPERATION CONTROL SYMBOLS AND DECALS

Headlight Switch Positions

These symbols appear on the light switch. As indicated, each one represents the headlights functions.



Water Temperature Gauge

This symbol appears on the water temperature gauge. This gauge warns the operator if the coolant system is overheating.

Park Brake Indicator Light

This light will come on when the park brake is applied.

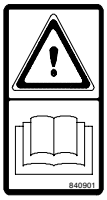
Engine Oil Pressure Light

This light will come on when the ignition key is turned to the ON position and when the engine is started (it will shut off once the engine is running). **Its main function is to warn the operator if the oil pressure gets to low. If this light comes on during normal vehicle operation, stop the vehicle and check for problems**

This decal warns the operator not to turn valve off while pump is running

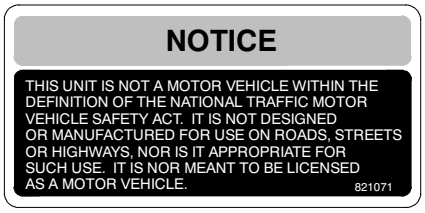
Electric Cooling Fan Warning

This decal warns the operator that the cooling fan can start at any time even with the ignition key in the OFF position.



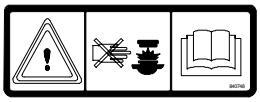
Operator's Manual

This decal instructs the operator to read and understand the Operator's Manual before operating this vehicle.


NOTICE
THIS UNIT IS NOT A MOTOR VEHICLE WITHIN THE DEFINITION OF THE NATIONAL TRAFFIC MOTOR VEHICLE SAFETY ACT. IT IS NOT DESIGNED OR MANUFACTURED FOR USE ON ROADS, STREETS OR HIGHWAYS, NOR IS IT APPROPRIATE FOR SUCH USE. IT IS NOR MEANT TO BE LICENSED AS A MOTOR VEHICLE.
821071

Motor Vehicle Compliance

This decal lets the operator know that the vehicle is not defined as a motor vehicle and therefore should not be driven on streets, roads or highways

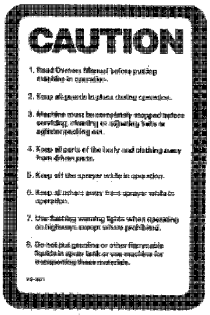


Radiator Coolant Warning

This decal warns the operator not to remove the radiator cap when the engine is hot. Refer to the Cooling System Section in this manual for proper safety and operating instructions.

Battery (Voltmeter) Charging

This symbol appears on the voltmeter gauge. This gauge indicates the charging of the battery.



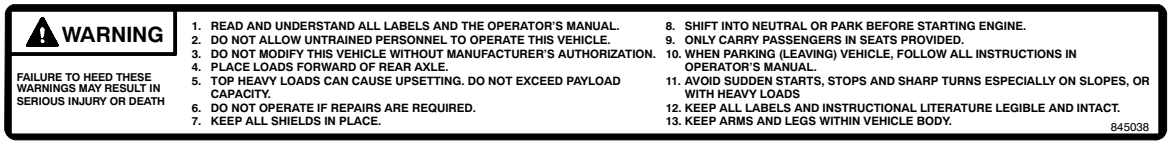
This decal is located on the upper left corner of the spray tank.

WARNING
PARKING BRAKES ARE NOT AUTOMATICALLY APPLIED. VEHICLE MAY MOVE CAUSING PERSONAL INJURY AND/OR PROPERTY DAMAGE. ALWAYS APPLY HAND OR FOOT BRAKES.
822819

Park Brake Warning

This decal warns the operator that the park brake ***is not*** automatically applied.

This is the spray tank indentification decal.


WARNING
FAILURE TO HEED THESE WARNINGS MAY RESULT IN SERIOUS INJURY OR DEATH
1. READ AND UNDERSTAND ALL LABELS AND THE OPERATOR'S MANUAL.
2. DO NOT ALLOW UNTRAINED PERSONNEL TO OPERATE THIS VEHICLE.
3. DO NOT MODIFY THIS VEHICLE WITHOUT MANUFACTURER'S AUTHORIZATION.
4. PLACE LOADS FORWARD OF REAR AXLE.
5. TOP HEAVY LOADS CAN CAUSE UPSETTING. DO NOT EXCEED PAYLOAD CAPACITY.
6. DO NOT OPERATE IF REPAIRS ARE REQUIRED.
7. KEEP ALL SHIELDS IN PLACE.
8. SHIFT INTO NEUTRAL OR PARK BEFORE STARTING ENGINE.
9. ONLY CARRY PASSENGERS IN SEATS PROVIDED.
10. WHEN PARKING (LEAVING) VEHICLE, FOLLOW ALL INSTRUCTIONS IN OPERATOR'S MANUAL.
11. AVOID SUDDEN STARTS, STOPS AND SHARP TURNS ESPECIALLY ON SLOPES, OR WITH HEAVY LOADS
12. KEEP ALL LABELS AND INSTRUCTIONAL LITERATURE LEGIBLE AND INTACT.
13. KEEP ARMS AND LEGS WITHIN VEHICLE BODY.
845038

Vehicle Operation

This decal informs the operator of proper procedures for safely operating the vehicle. Read this manual completely to become aware of other safety issues and operating procedures which will help you operate this vehicle in a safe and responsible manner.

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After you identify a part by the reference number and the six digit part number (some items may have five digits, nine digits ***or*** some may have ten) ***always*** read the description of the part to make sure it is the part you need.

When ordering parts for your vehicle, you will need to include the vehicle serial and model numbers.

All SDI parts can be ordered directly from the SDI factory.

Phone (559) SDI-5555 ***or*** **Fax** (559) SDI-5591

WARNING

- **When replacement parts are required, use genuine Cushman parts or parts with equivalent characteristics including type, strength and material. Failure to do so may result in product malfunction and possible injury to operator and/or bystanders.**
- **Illustrations in this manual are a reference guide for parts identification only. Since these illustrations may not depict actual positioning of component parts, they should not be used as an assembly diagram. Doing so may result in improper assembly leading to sudden failure.**

VEHICLE IDENTIFICATION NUMBERS

THE FOLLOWING IDENTIFICATION NUMBERS MUST APPEAR ON ALL CORRESPONDENCE CONCERNING THIS VEHICLE.

NOTICE

- Reference to the ***front, rear, left*** and ***right*** sides of the vehicle are always determined by the ***operator's seated position.***

The Vehicle Identification Number (VIN), model number and serial number are all printed on the Nameplate/Identification Decal attached to the crossmember under the dash (See Fig. 1).

The serial number and model number are stamped on the crossmember. It is located to the left of the model and serial no. decals (See Fig. 2).

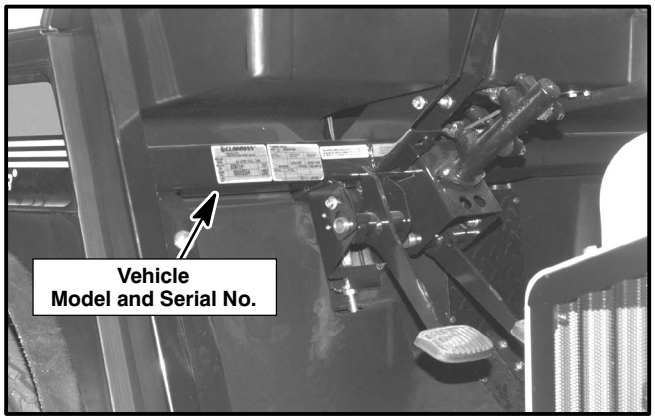


Figure 1
Nameplate / Identification Decal

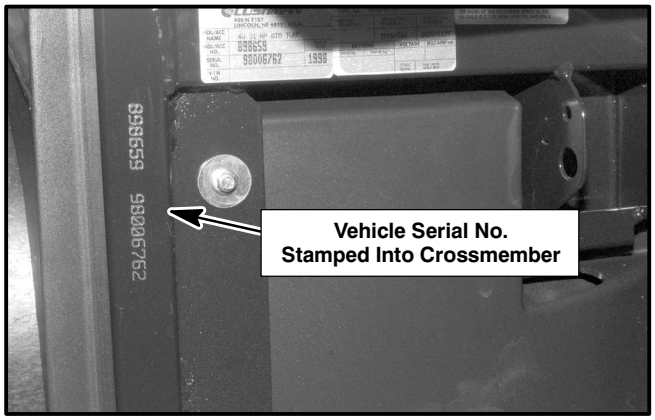


Figure 2
Serial Number And Model Number

ENGINE IDENTIFICATION NUMBERS

Your Cushman DS 300 Spraytek is equipped with a Suzuki 970 4-cylinder, gasoline powered, liquid-cooled, four cycle engine.

The Engine Serial No. for the Suzuki 970 engine is stamped onto the lower engine block on the right side of the engine.

It's located on the lower engine block beneath the air cleaner.

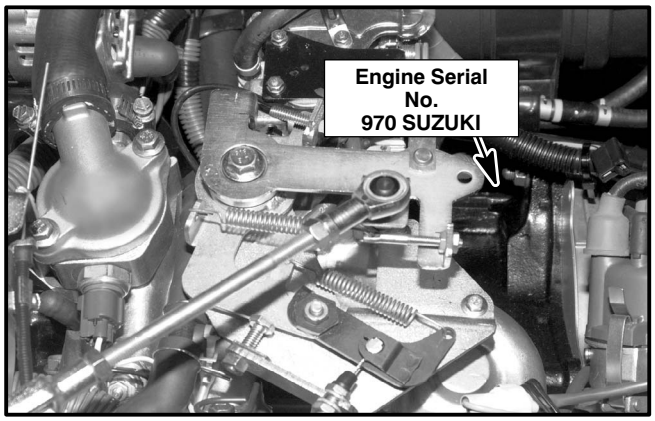


Figure 3
Suzuki 970 Engine Serial Number
(As Viewed From the Drivers Side of Vehicle)

VEHICLE SPECIFICATIONS

Specifications subject to change without notice.

Power is transmitted to the rear wheels by a disc type clutch, 4-speed transmission with a low-low creeper gear, a driveshaft with two universal joints and a two-speed hypoid differential with a 14.21:1 gear ratio.

The vehicle is equipped with four wheel hydraulic service brakes and a hand-lever operated parking brake integral to the rear drums.

CAPACITIES

Fuel Tank . . . . . 6.5 gal. (24.5 L)
Transmission . . . . . 1.05 qt. (1 L)
Differential (14.21:1) . . . . . 5.2 Pints (2.46 L)

Cooling System:
Suzuki 970 . . . . . 3.3 qts. (3.0 L)
Crankcase (including filter):
Suzuki 970 . . . . . 3.7 qt. (3.5 L)

BATTERY

Volts 12
BCI Group . . . . . Size 24
Cold Cranking Amps Minimum 420
Reserve Capacity Minutes Minimum 70
Ground Terminal Polarity . . . . . NEGATIVE

LUBRICATION RECOMMENDATIONS

Transmission Oil . . . SAE EP 80-90 Gear Lube
Differential Oil . . . . . SAE EP 80-90 Gear Lube
Pressure Gun Grease . . . . . Lithium Base
Power Steering . . . . Power Steering Fluid (GM)

BRAKE FLUID

Use type . . . . . Dot 3

GEAR RATIOS

Manual Transmission
4th Gear 1.000:1
3rd Gear 1.469:1
2nd Gear 2.361:1
1st Gear 4.063:1
Reverse Gear 3.750:1
Differential 14.21:1

FUEL

Gasoline Engines . . . . . Unleaded gasoline
87 Octane or higher

ENGINE SPECIFICATIONS

Suzuki 970 Engine

Horsepower (SAE hp) 34
Max. Engine Speed . . . . . 3600 RPM
Stroke . . . . . 2.83” (72mm)
Bore . . . . . 2.58” (65.5mm)
Displacement . . . . . 59.2 cu in. (970 cm^3)
Compression Ratio 8.8:1
Cylinder Compression . . . . 178 PSI (1,228 kPa)
Engine Rotation
(viewed from flywheel) . . . . . Counterclockwise
Valve Clearance (intake) .0031″ cold (0.08 mm)
(intake) .0047″ hot (0.12 mm)
(exhaust) .0039″ cold (0.10 mm)
(exhaust) .0047″ hot (0.12 mm)
Spark Plug Gap . . . . . .032-.035 (0.8-0.9 mm)
Spark Plug Number . . . . . NGK BP5ES
OR Denso W16EX-U
Spark Plug Torque . . 18.5-21.5 lb. ft. (25-30 N·m)
Breaker Point Gap . . . . . .008-.015 (0.2-0.4 mm)
Ignition Timing . . . . . 4-5° BTDC @ 950 RPM
Idle Speed . . . . . 950 ± 50 RPM

WARNING

- **To prevent premature engine failure and speeds greater than design limits, *NEVER* alter the governor controls in any manner to increase engine speed beyond recommended maximum R.P.M.**

NOTICE

- The engine governor controls are preset to control engine and ground speeds to design limits.

GAUGES, WARNING LIGHTS and CONTROLS

The following pages contain information which will help you become more familiar with the different gauges and controls you will be using while operating this vehicle.

TACHOMETER (1)

Indicates the engine speed (x 100) in revolutions per minute (See Fig. 4).

HOUR METER (2)

The hour meter (See Fig. 4) records the number of hours the engine has run. The hour meter runs when the key switch is ***"ON" even if the engine is not running***.

FUEL GAUGE (3)

The fuel gauge (See Fig. 4) indicates the amount of fuel remaining in the fuel tank.

OIL PRESSURE WARNING LIGHT (4)

The **RED** oil pressure light (See Fig. 4) indicates oil pressure is too low for engine operation.

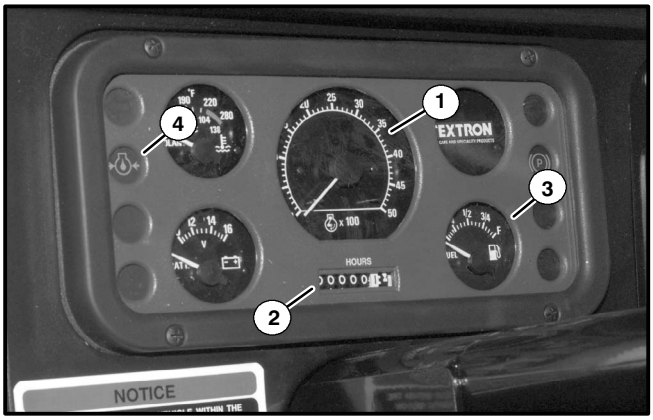


Figure 4
Dash Panel Identification

VOLTMETER (5)

The voltmeter (See Fig. 5) indicates the voltage level of the battery. Under normal operation it will indicate 12 to 18 volts (meaning the battery is being properly charged). A reading below 12 volts indicates the battery is being drained, this may **indicate a malfunction in the charging system which should be checked immediately.**

BRAKE FLUID LEVEL WARNING LIGHT (6)

This light (See Fig. 5) indicates the brake fluid level is low.

WATER TEMPERATURE GAUGE and OVERHEAT WARNING BUZZER (7)

The purpose of this system is to warn the operator if the engine temperature exceeds the normal operating range.

If the water temperature gauge (See Fig. 5) raises above the 230° F (110°C) mark, a heat sensor is activated causing the overheat warning buzzer to sound.

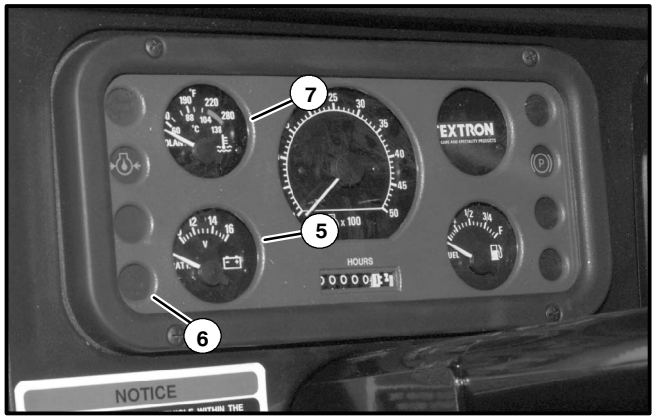


Figure 5
Dash Panel Identification

ACCESSORY POWER PLUG

A power port is available for plugging in laptop computers, cellular phones and other accessory items which require a 12-volt plug-in (See Fig. 6).

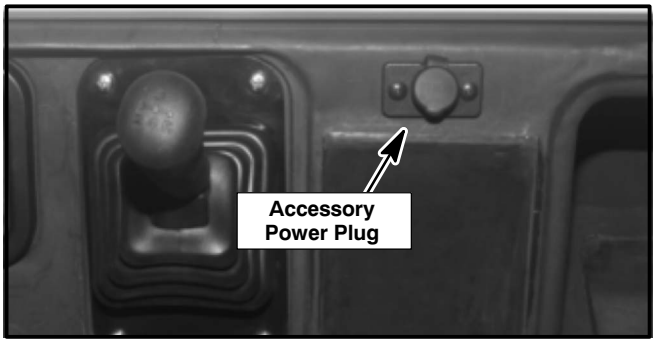


Figure 6
Accessory Power Plug

IGNITION SWITCH

1. **ACCESSORY POSITION** – Allows use of various instruments and accessories without causing ignition system damage.
2. **OFF POSITION** – Prevents function of all vehicle electrical power operated features except for the flasher (hazard) lights, and the radiator cooling fan. **Switch must be in OFF position for key removal**.
3. **ON POSITION** – Key is placed in this position for normal engine operation.
4. **START POSITION** – Hold key in start position to engage engine starter. Upon release, key will return to ON position automatically. **Key must be returned to the *OFF* position before the starter can be reactivated.**

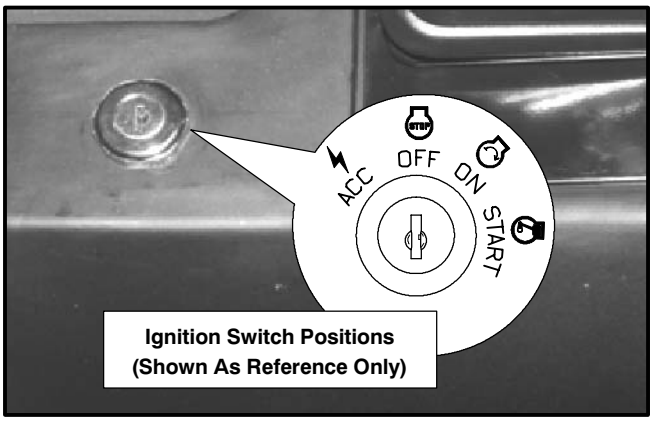


Figure 7
Four Position Ignition Switch

NOTICE

- ***DO NOT*** turn key to START position with vehicle engine running. Damage to flywheel teeth may result.

DANGER

- ***Never*** **turn the key to the START position unless the clutch pedal is depressed (pushed down) or the gear selector is in neutral. If the vehicle is *in any gear other than neutral,* and the clutch pedal *is not* depressed when the engine is started, the vehicle may *lurch* forward or backward depending which gear the vehicle is in. This lurching could cause serious personal injury or death.**
- **If the engine *will* start *without depressing* the clutch pedal the clutch interlock system should be repaired *immediately* by your authorized Cushman dealer.**

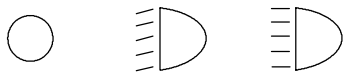
HORN BUTTON

The horn button is located to the left of the steering wheel, below the dash panel. Depress to sound horn. Horn will not sound when the ignition switch is in the ***OFF*** position.

LIGHT SWITCH

The light switch is used to turn the headlights and taillights on. The switch has three detents, OFF, DIM, and BRIGHT. Push switch up one detent for DIM or push switch up two detents for BRIGHT.

HEADLIGHT OPERATION SYMBOLS



OFF **DIM (1st Detent)** **BRIGHT (2nd Detent)**

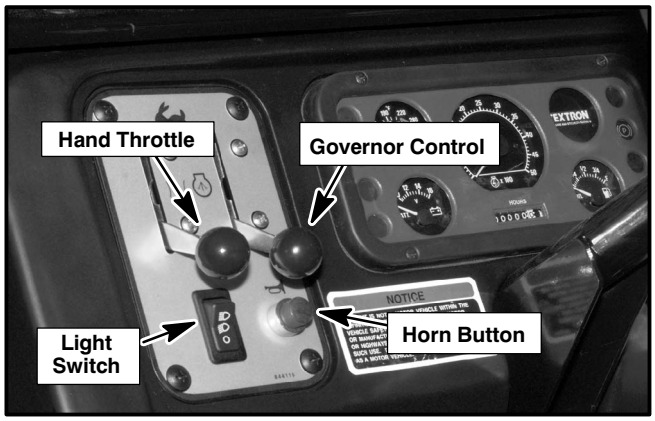


Figure 8
Horn Button and Light Switch Location

FOOT CONTROL PEDALS

Following are brief descriptions of the foot control pedals and their functions. **Refer to "Driving the Vehicle" beginning on Page 21 for more information on how these pedals are used.**

CLUTCH PEDAL

The clutch has a **Safety Feature** called a **"clutch interlock switch"**.

This switch prevents the starter from operating unless the clutch is disengaged (the clutch pedal is depressed).

If the engine ***will*** start ***without depressing*** the clutch pedal:

- ***DO NOT*** operate the vehicle. The clutch interlock system should be repaired ***immediately*** by your authorized Cushman dealer.

The clutch pedal has to be ***depressed:***

- before starting the vehicle
- before shifting into any of the gears and
- before coming to a complete stop

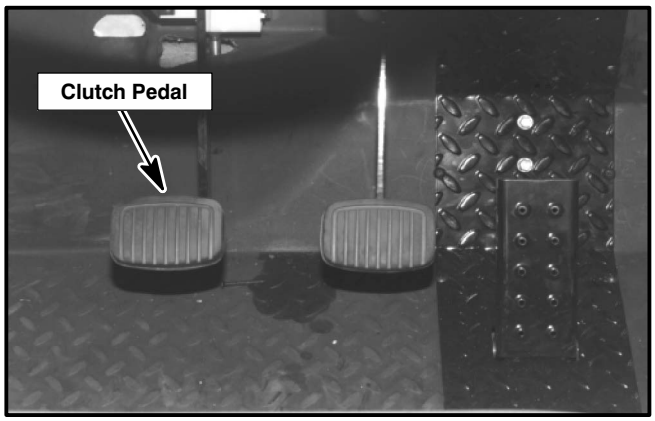


Figure 9
Clutch Pedal Location
(Manual Transmission Only)

DANGER

- ***Never*** **start the engine unless the clutch pedal is depressed (pushed down). If the vehicle is *in any gear other than neutral,* with the clutch pedal *not* depressed and the engine is started, the vehicle will *lurch* forward or backward depending which gear the vehicle is in. This lurching could cause serious personal injury or death.**

FOOT THROTTLE (ACCELERATOR) PEDAL

Push pedal down to open throttle ***(increase speed),*** release to return throttle to idle position ***(decrease speed).***

SERVICE BRAKE PEDAL

Depress the pedal to slow or stop the vehicle.

If the brakes ***DO NOT*** stop the vehicle properly, the brakes must be adjusted or repaired.

CAUTION

- **Improper maintenance of brake system can result in the operator losing control of vehicle.**
- **Loads not properly secured can quickly shift causing personal injury or vehicle damage if the brakes are applied too hard and fast.**

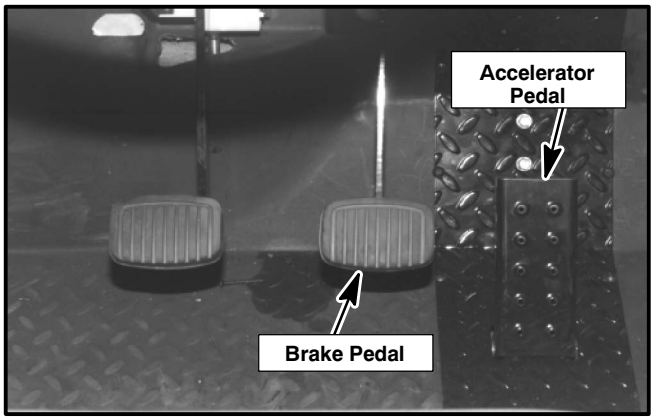


Figure 10
Foot Control Pedals

GEAR SELECTOR

Manual Transmission

The gear selector has an "H" pattern as shown in Figure 11. There is also a shift-pattern design molded into the top of the gear selector handle.

Refer to the section "Driving the Vehicle" beginning on Page 21 for information on the proper way to shift gears.

Remember, ***before*** shifting to ***any*** gear you have to ***depress*** the clutch pedal ***before*** you shift to that particular gear.

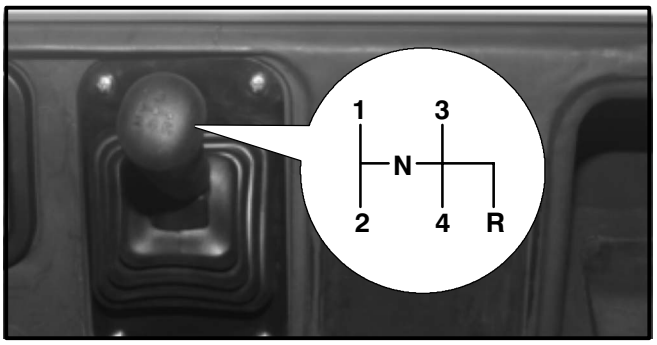


Figure 11
Shift Pattern (Manual Transmission)

PARKING BRAKE LEVER

The park brake lever is located to the left side of the drivers seat. To engage the brake, pull up on the lever until park brake is applied.

To release; while slightly pulling up on the handle, push the button at the end of the lever and while holding the button in, lower the lever to it's original position as shown in Figure 12.

NOTICE

- Parking brakes are not automatically applied. Make sure and set the park brake when leaving the vehicle.

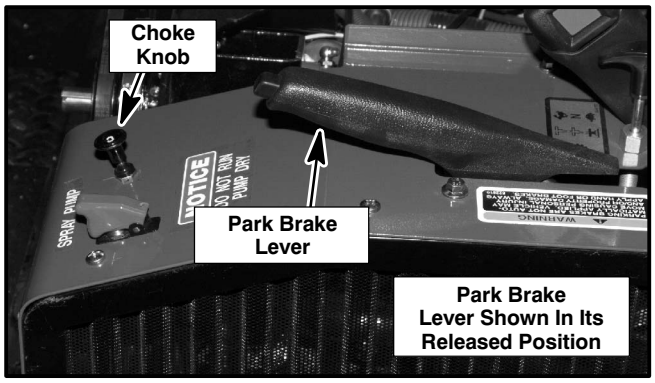


Figure 12
Choke Knob & Park Brake Lever

CHOKE (Suzuki 970 engines Only)

The choke is used to assist the starting of a cold engine. Pull ***up*** on the choke knob ***and hold*** in the full or partially open position. When the engine has warmed up and is running smoothly release the choke knob (the choke knob is spring loaded in the open position, it will return to its normal position when released) (See Fig. 12).

SERVICE and MAINTENANCE

***T**hink **A**head! **W**ork **S**afely!*

WARNING

- **When replacement parts are required, use genuine Cushman parts or parts with equivalent characteristics including type, strength and material. Failure to do so may result in product malfunction and possible injury to the operator and/or bystanders.**
- **Never attempt to perform service or maintenance functions on this vehicle if you are UNTRAINED or UNAUTHORIZED. Improper maintenance can cause hazardous conditions. See your authorized CUSHMAN dealer for necessary maintenance and service.**
- **Always replace any warning decal that becomes hard to read.**
- **To reduce risk of fire, always keep the engine free of excessive grease.**

ENGINE MAINTENANCE

Keep your engine clean.

If dirt has accumulated on the engine, it should be washed with a non–flammable solvent or strong detergent.

When washing becomes necessary, it can be carried out simultaneously when servicing the vehicle.

In order to maintain reliable service from your engine, a regular check-up and maintenance schedule should be followed.

The following maintenance information covers basic engine service only.

For extensive service and repairs, we recommend contacting the authorized Cushman dealer nearest you.

Proper maintenance will prolong the engine's life and avoid premature overhaul.

ACCESS TO ENGINE

Never remove or install the engine cover while the engine is running. The engine cover is a ***machinery guard*** and its removal exposes you to moving parts. Keep hands, hair and clothing away from flywheel, radiator cooling fan, alternator fan, engine belts, pulleys and air intake.

WARNING

- **Keep clothing, hands and hair away from moving parts. These items could become entangled, causing serious personal injury.**

For servicing the engine and related components, the engine cover can be tilted forward or removed.

To gain access to the engine, push the engine cover latch to the rear of the unit, tilt cover forward (the latch is located near the right rear corner of the seat cushion).

There is also a key-lock latch available. To gain access to the engine when using the key-lock latch, insert the key into the locking handle located to the side of the engine cover latch, turn the key to allow the latch to be opened.

When replacing the engine cover, make sure the retaining tabs, located at the front corners of the engine cover, are inserted into the slots in the floorboard.

WARNING

- **Failure to latch the seat properly can result in the engine cover tipping forward causing loss of control of the vehicle and possible personal injury.**

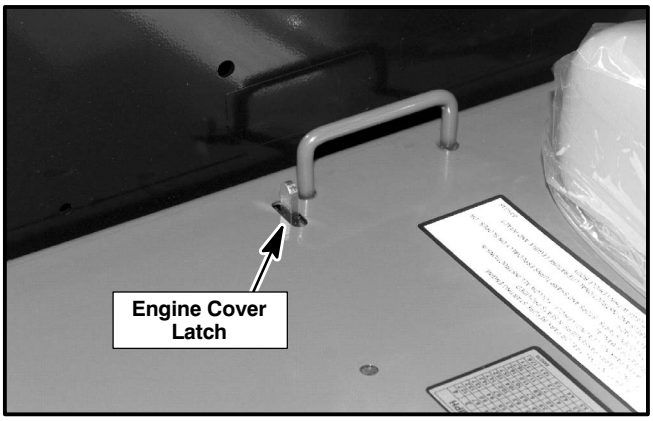


Figure 13
Engine Cover Latch

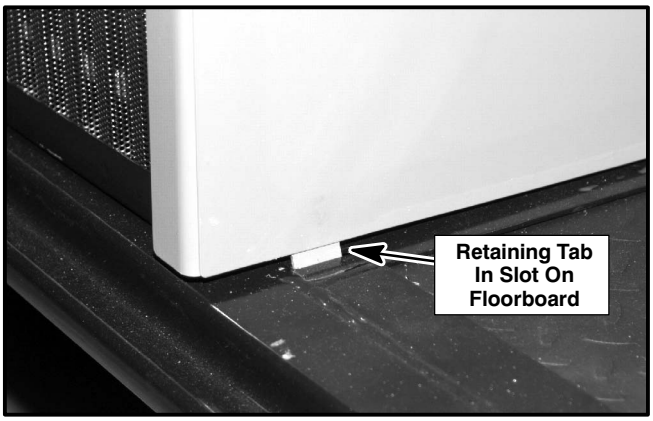


Figure 14
Engine Cover Retaining Tab

PRE-STARTING CHECKLIST

Before starting your engine for the first time, after a prolonged shutdown and before each days use, check the following:

1. Check the engine oil level.
2. Check the radiator coolant level and radiator intake screen.
3. Check the fuel level.
4. Check tire pressure.
5. Check brake fluid level.

ENGINE OIL LEVEL

Always turn the engine ***off*** when checking the oil level.

NOTICE

- Make sure vehicle is on level surface and the park brake is applied.

Remove the dipstick and wipe with a clean rag, reinsert the dipstick until it contacts the oil tube, remove dipstick and read the oil level.

The oil level should always between the **ADD** and **FULL** mark on the dipstick. ***DO NOT OVER FILL.***

If the engine has recently been running, allow time (with the engine turned off) to let the oil settle to obtain a correct level reading.

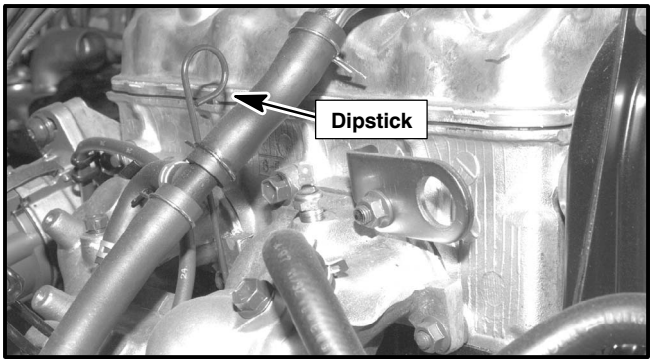


Figure 15
Dipstick Location, 970cc Suzuki Engine

If the oil level is below the add mark, remove the oil fill cap and add the appropriate amount of engine oil. Use the dip stick to check the level again, if oil level is sufficient, replace oil fill cap. ***DO NOT OVERFILL***

Use an **SAE 10W-30** oil to bring the level up between the marks.

Use only oils recommended for service class (as defined by API) SF/SG/SH for gasoline engines.

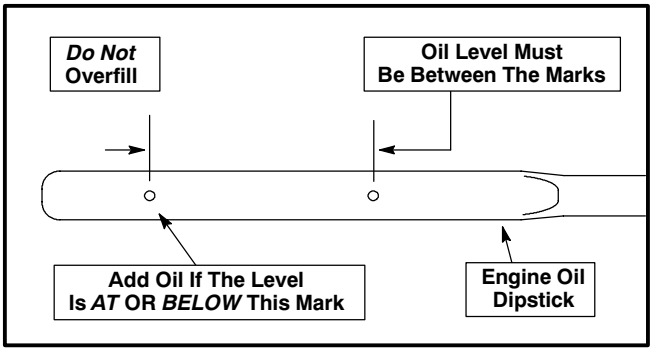


Figure 16
Oil Level Reading

NOTICE

- Using oil other than the service classes listed, or oil change intervals longer than recommended could reduce engine life. Damage to engines due to improper maintenance or use of incorrect oil quality and/or viscosity is not covered by the engine warranty.

Engine Oil Level (con't.)

Change Engine Oil

Drain plugs are located beneath the engine, either in the oil pan or in the engine block (depending on model).

Engine oil and oil filter changed as follows:

Suzuki 970 . . . . . after first 50 hours or 500 miles

then every 100 hours* (or 3 months) thereafter

***** Depending on operating conditions, oil and filter may need more frequent changing.

CAPACITY:

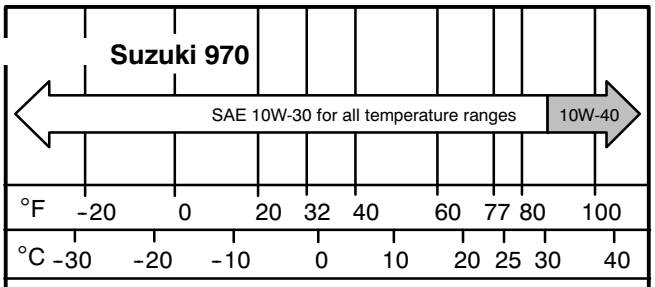
Suzuki 970 Engine - 3.3 qts. (3.0 L)

Engine Oil Filter Replacement Part No.

Engine Model	Order Part No.
Suzuki 970	16510-82703

NOTICE

- Although the oil is checked before each days use it is possible something can go wrong with the engine. While operating the vehicle and you notice the ***oil pressure warning light*** coming on, **STOP** the vehicle and check for problems.
- Significant oil loss can damage the engine. Considerable oil loss could be due to a loose or incorrectly installed drain plug, cracked gaskets, even a loose oil filter.



Temperature Range Anticipated Before Next Oil Change

Using multi grade oils (5W-20, 10W-30, and 10W-40) will increase oil consumption. Check oil level more frequently when using them.

Figure 17
Oil Pressure Warning Light

ENGINE COOLING

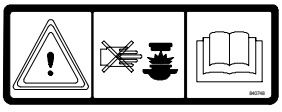
The vehicle is equipped with a cooling radiator, electric fan and a water temperature gauge with overheat buzzer. Pivot the engine cover forward to gain access to the radiator.

WARNING

- **The cooling fan is thermostatically controlled and *may start at any time even with the ignition key in the OFF position*. *DO NOT* attempt service without first disconnecting the negative (-) battery cable or without first removing the cooling fan fuse.**

Decals you will see on your vehicles coolant system.

FAN WARNING



RADIATOR WARNING

Engine Cooling (con't.)

To provide proper engine cooling:

- ***DO NOT*** obstruct or cover the air intake screen in front of the radiator (right side of vehicle).
- Keep the screen and the radiator fins clean.

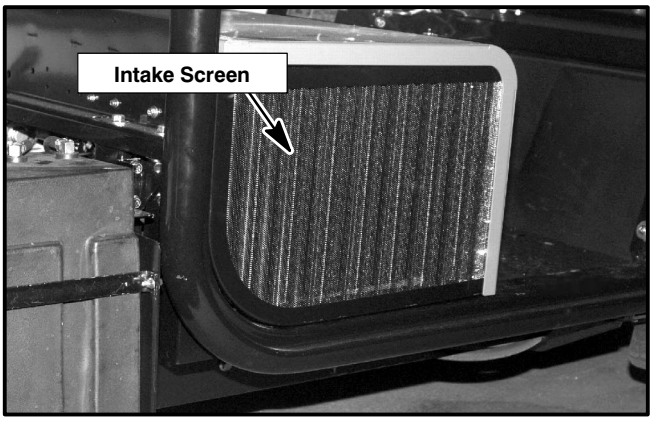


Figure 18
Intake Screen (Right Side of Vehicle)

If the fins or screen become dirty, air cannot circulate well enough to cool the engine sufficiently, therefore you risk the chance of the engine overheating.

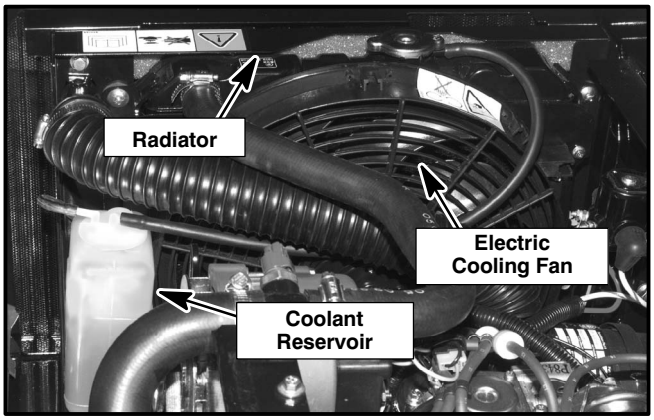


Figure 19
Radiator Location
(As Viewed From Left Side of Vehicle)

NOTICE

- Clean the radiator fins with compressed air. If water is used to clean the radiator, **use compressed air to blow all the water from the fins.** Water left between the fins will collect dirt and reduce the amount of air flow to properly cool the engine.

Check Coolant Level

1. Tilt the engine cover forward to gain access to the radiator located below the right side of the engine cover (below passenger seat).

CAUTION

- **Be careful when opening the engine cover or when raising the seat, parts that are metal may be *hot* to the touch.**
- **The vehicle seat is a machinery guard. To avoid injury, use extreme caution and *DO NOT* place hands or clothing near moving parts (belts, fan, etc.).**
- **ALWAYS make sure the engine is stopped and cool before removing the radiator cap. To prevent scalding by hot water, *NEVER* remove cap while radiator is hot.**

2. With the engine stopped and cool, remove radiator cap and check coolant level in radiator. The coolant level should be at or within 1/4" (6.4 mm) of the bottom of the filler port.
3. Visually check the reservoir tank, a maximum of 4 inches (102 mm) of coolant should be seen.
4. If coolant level is low, add a 50/50 anti-freeze mixture to the radiator until the correct level has been obtained (coolant should be level or within 1/4" (6.4 mm) from the bottom of the filler neck).

NOTICE

- ***Never*** add straight anti-freeze to the radiator. Make a 50/50 mixture of anti-freeze and water in a separate container ***before*** adding coolant to the system. The mixture must ***never*** be more than 50% anti-freeze.

Engine Cooling (con't.)

If the reservoir bottle needs additional coolant, add coolant until it reaches a level of approximately 4" (102 mm). Replace radiator and reservoir bottle caps, and close and latch the engine cover.

During operation (driving), if the water temperature gauge shows **230° F (110° C)** ***or over,*** and/or the overheat warning buzzer sounds, follow this procedure:

1. ***STOP*** the vehicle, ***DO NOT*** STOP THE ENGINE.
2. ***Immediately*** disengage any accessories that are operating.
3. Slow the engine to a "fast idle".
4. Remove any dirt , chaff, debris, etc. from the radiator intake screen located on the right side of the engine cover.

The temperature gauge needle should go down within approximately 30 seconds after the intake screen is cleaned (with the engine still running). If the temperature does not go down, ***STOP THE ENGINE*** and check the following areas:

1. Raise vehicle seat and visually check to see if electric radiator fan is operating. Check to determine if there may be a leak in the cooling system. Make any necessary repairs immediately.

CAUTION

- **Be careful when opening the engine cover or when raising the seat, parts that are metal may be *hot* to the touch.**
- **The cooling fan is thermostatically controlled and *may start at any time, even with the ignition key in the OFF position*.**
- **The cooling system is under pressure, if a leak is present, be careful when raising the seat or when opening the engine cover. *Hot* coolant can be sprayed causing personal injury.**
- **ALWAYS make sure the engine is stopped and cool before removing the radiator cap or before performing any service or maintenance on or around the engine area. To prevent scalding by hot water, *NEVER* remove cap while radiator is hot.**

2. Check oil engine level.
3. Check radiator and coolant reservoir levels.

Failure to heed the *overheat warning* and *properly maintain* the cooling system *will cause* permanent engine damage.

DRAINING and FILLING THE COOLING SYSTEM

Cooling system should be drained and refilled every **12 months or 600 Hrs.**

Capacity Suzuki Cooling Systems: 3.3 qts. (3.0 L)

To Drain The Cooling System:

Remove the electric cooling fan fuse (See Fig. 20).

WARNING

- **The cooling fan is thermostatically controlled and *may start at any time even with the ignition key in the OFF position*. *DO NOT* attempt service without first disconnecting the negative (-) battery cable or without first removing the cooling fan fuse.**

Engine Cooling (con't.)

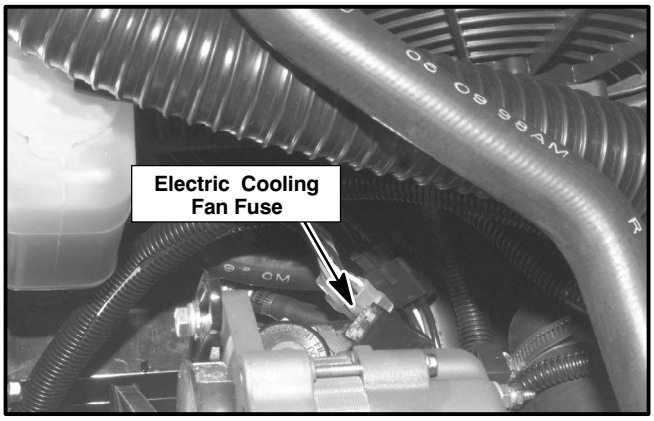


Figure 20
Electric Cooling Fan Fuse

1. After the engine has cooled, remove the radiator cap and open the drain cock at the bottom of the radiator.

NOTICE

- Drain coolant into an approved container and dispose of properly.

2. Remove the lower radiator hose to completely drain the engine block.
3. Drain the coolant from the reservoir bottle. Remove the overflow hose from the bottom of the bottle to drain coolant from reservoir or remove the overflow hose connected to the neck of the radiator fill port.
4. After radiator and engine block have drained, connect the lower radiator hose to the radiator and any other hoses you may have removed.

Check all radiator hoses and connections for leakage, cracking and brittleness. Replace if necessary.

To Fill The Cooling System:

1. Fill radiator to the bottom of the filler neck with a 50/50 mixture of antifreeze and water.
2. Fill reservoir bottle to the **FULL** mark with the anti-freeze/water mixture.
3. Run the engine with the radiator cap removed until the upper radiator hose becomes warm (this will tell you the thermostat has opened).
4. Add coolant until it stays level with the bottom of the filler neck. Install radiator cap. Connect cooling fan.

NOTICE

- ***Never*** add straight anti-freeze to the radiator. Make a 50/50 mixture of anti-freeze and water in a separate container ***before*** adding coolant to the system. The mixture must ***never*** be more than 50% anti-freeze.
- Always recycle or dispose of used antifreeze in a responsible manner. Used antifreeze can be harmful to the environment.

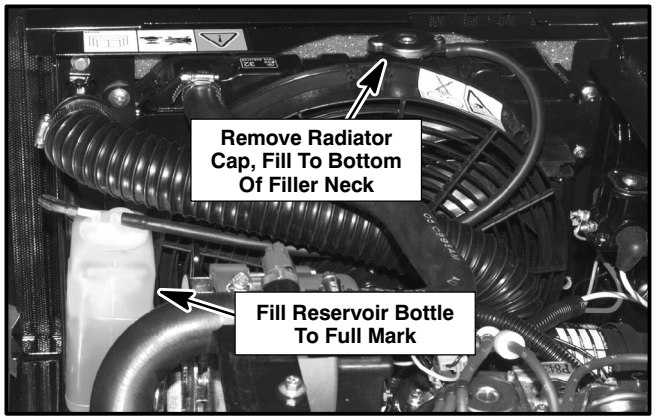


Figure 21
Radiator & Coolant Reservoir
(As Viewed From Left Side of Vehicle)

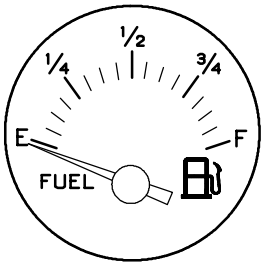
FUEL LEVEL

1. Check fuel level in fuel tank. Turn the ignition switch to the ON position, fuel level will be determined by how far the fuel gauge needle rises. The following illustration shows the various levels for reading the fuel level gauge.

Fuel Level (con't.)

2. Fuel tank capacity is **6.5 gal. (24.6 L).** Fill if necessary using the following fuel recommendations:

   Gasoline Engines . . . . Unleaded gasoline with an 87 or higher Octane reading



Fuel Tank Volume

WARNING

- **Remove fuel cap slowly. Fuel may be under pressure. Spray may cause serious injury.**
- **Engine fuels are extremely flammable and highly explosive under certain conditions. Fuel leakage can occur while in transit, in storage or while the vehicle is being used. Such leakage can contibute to an explosion, fire or personal injury.**
- ***NEVER* remove the fuel tank cap or attempt to refuel the unit while the engine is running.**
- ***NEVER* refuel indoors. *NEVER* refuel in areas with pilot lights or open flames present.**
- ***NEVER* smoke while refueling.**
- ***ALWAYS* wipe up spilled fuel immediately.**
- ***NEVER* operate the unit without an unapproved cap on the fuel tank filler opening.**

GASOLINE CONTAINING ALCOHOL

We ***DO NOT*** recommend the use of ***ALCOHOL*** bearing fuels in any of our products. The use of these fuels may create a potential safety hazard.

WARNING

- **Gasoline containing ALCOHOL can cause deterioration of some non-metallic materials in the fuel system.**
- **Fuel hoses must be inspected frequently and replaced if excessive stiffness, deterioration or fuel leakage is found.**
- **Gasoline containing ALCOHOL will attract and hold moisture inside fuel tanks. Moisture may cause corrosion of metallic parts within the fuel system.**

TIRE PRESSURE

1. Check all tires for proper inflation. Keep tires inflated to the specifications corresponding to that particular tire size (see inflation chart on following page).

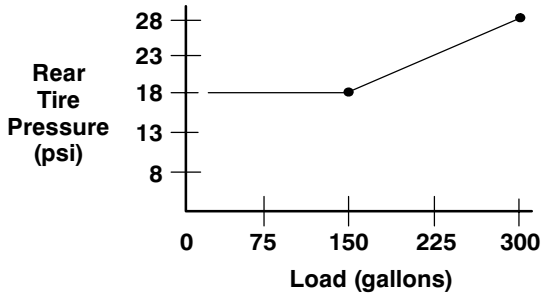
Tire Pressure (con't.)

- Air pressure needed is determined by the payload carried. Adjust pressure as required. **Rear tire inflation must be set at 28 psi (193 kPa) if the load is 300 gal.**

  Lower pressure will help avoid leaving tire marks in soft turf. Higher pressures may be required for heavy loads. ***NEVER*** exceed the maximum pressure indicated on the tire.

- Improper inflation will shorten the life of your tires considerably. Fill tires with care. Use a pressure gauge before connecting an air hose to a partly inflated tire. **Due to the low air volume needed, over-inflation may be reached in a matter of two or three seconds.**

TIRE SIZE	TIRE PRESSURE
20.00 x 10.00-10	20 PSI (138 KPA)
24.00 x 13.00-12	See Chart Below



BATTERY

WARNING

- **UNTRAINED/UNAUTHORIZED persons should NEVER attempt to service or recharge the battery in this vehicle.**
- **Battery electrolyte is an acidic solution and should be handled with care. If electrolyte is spilled or splashed on any part of the body, immediately flush the exposed area with liberal amounts of water and obtain medical aid immediately.**

The battery in this vehicle is a 12-volt "low maintenance" battery. Add distilled water as required.

The battery is negative ground and if connected in the opposite polarity, damage to the alternator will occur. The same applies when connecting a booster battery to the system. **Battery cables must be *disconnected before* using a "fast charger" or damage to the alternator may result.**

Keep top of battery clean and free of corrosion by washing with a solution of baking soda and water or ammonia and water. Rinse with clean water.

Terminals with heavy corrosion should be removed and properly cleaned with solution.

For best results clean both battery post and cable terminals until shiny. Replace terminals and tighten.

BCI Group . . . . . Size 24
Cold Cranking Amps (minimum) . . . 420
Reserve Capacity (minutes) 70

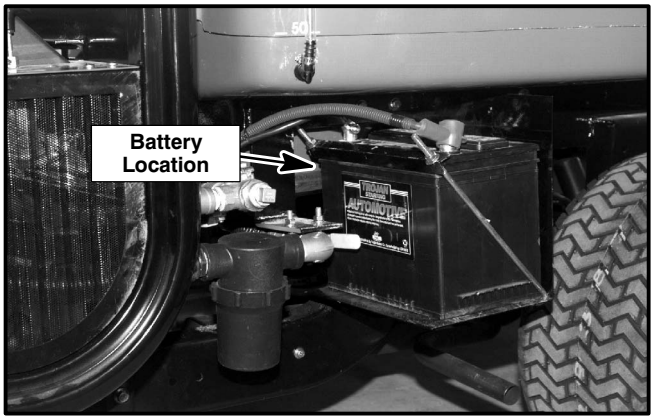


Figure 22
Battery Location

The battery is located on the left side of the vehicle, directly in front of the rear tire.

JUMP STARTING WITH A BOOSTER BATTERY

WARNING

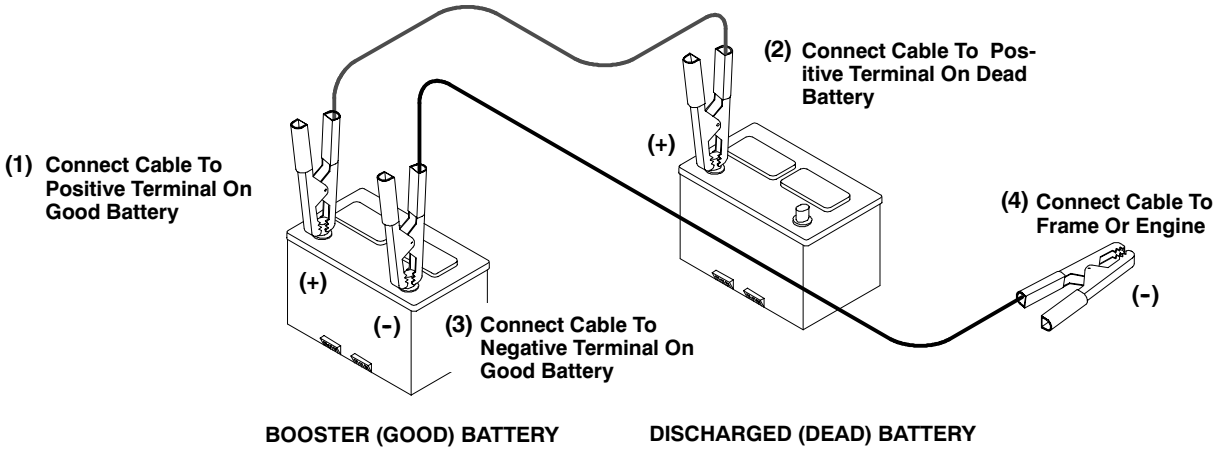
- ***DO NOT* allow open flames or sparks near a battery when connecting for jump starting or while recharging the battery with a charger.**
- **Hydrogen gas is produced during the charging process and can be explosive. Provide adequate ventilation to prevent possible explosion.**

Both booster battery and discharged battery should be treated carefully when using jumper cables. Follow **exactly** the procedure outlined, being careful not to cause sparks.

1. **For Manual Transmissions:**
   (Whether it's the vehicle with the good battery and/or the vehicle with the bad battery)
   Apply parking brake, put transmission in ***neutral*** and turn off all electrical loads
2. Attach one end of one jumper cable to the positive (+) terminal of the booster battery and the other end to the positive (+) terminal of the discharged battery. ***DO NOT* permit vehicles to touch each other.**
3. Attach one end of remaining cable to the negative (–) terminal of the booster battery and the other end to a good ground on the vehicle or engine **away from the discharged battery. *DO NOT* lean over the battery when making this connection.**
4. WIth the cables properly connected, start the engine with the good battery. Slowly depress the accelerator pedal bringing the engine to a medium idle (***Do Not*** race the engine or permit RPM's to exceed 2000 rpm).
   Allow a few minutes for the discharged battery to get a charge before trying to start the engine. If the vehicle fails to start, repeat Step 4 allowing a few minutes more before trying to start the engine.
5. Reverse steps 2 & 3 **exactly** when removing the jumper cables.

This is a negative ground wiring system, reversing battery connection will damage alternator rectifier.

Booster batteries used for starting must be connected with proper polarity.


(1) Connect Cable To Positive Terminal On Good Battery
(2) Connect Cable To Positive Terminal On Dead Battery
(3) Connect Cable To Negative Terminal On Good Battery
(4) Connect Cable To Frame Or Engine
(+)
(-)
(+)
(-)
BOOSTER (GOOD) BATTERY
DISCHARGED (DEAD) BATTERY

STARTING THE ENGINE (Gasoline Engines)

DANGER

- ***Never* start the engine unless the clutch pedal is depressed (pushed down). If the vehicle is *in any gear other than neutral,* with the clutch pedal *not* depressed and the engine is started, the vehicle will *lurch* forward or backward depending which gear the vehicle is in. This lurching could cause serious personal injury or death.**

The clutch pedal has to be ***depressed before*** shifting into any of the gears. The clutch has a **Safety Feature** called a **"clutch interlock switch"**. This switch prevents the starter from operating unless the clutch is disengaged (the clutch pedal is depressed).

If the engine ***will*** start ***without depressing*** the clutch pedal:

- ***DO NOT*** operate the vehicle. The clutch interlock system should be repaired ***immediately*** by your authorized Cushman dealer.

1. Make sure the parking brake is applied (the parking brake should have been applied when the vehicle was last parked).
2. Turn the ignition key to the ON position and observe the warning lights and gauges (some of the warning lights will remain on until the engine has started and is running).
3. Push clutch pedal down **(starter will not operate unless clutch pedal is pushed down).** The clutch interlock switch prevents the starter from operating unless the clutch is disengaged (the clutch pedal is depressed).
4. Move the gear selector to "NEUTRAL".
5. If the engine has not been run for a period of time, it may be necessary to use the choke knob. Pull ***up*** on the choke knob and hold in the full or partially open position.
6. Turn and hold ignition key in the START position to engage engine starter, release key when engine starts (upon release, the key will automatically return to the ON position).
   - If the engine does not start after operating starter for 10 seconds, stop the starter. Wait for 30 seconds, then try to start the engine again.
   - **The starter motor should never be run for more than 30 seconds.**
7. When the engine is running smoothly, release the choke knob (it will return to its normal position when released). Allow engine to warm-up for 1 minute or longer before driving the vehicle.

DRIVING THE VEHICLE

WARNING

- **The movement from the liquid in the spray tank can affect the vehicles stability possibly causing tip-over. Avoid abrupt stops, sharp turns, steep inclines and jack-rabbit starts.**

After the engine has been started, release the parking brake.

The gear selector has an "H" pattern as shown in Figure 24 (there is also a shift-pattern design molded into the top of the gear selector handle).

When selecting the forward direction , begin with 1st or 2nd gear shifting to the next higher gear (and so on) as the vehicle gains speed. Note: 1st gear is a "creeper" gear, high engine r.p.m. can result in damage to engine if care is not taken before shifting to 2nd gear.

Driving the Vehicle (con't.)

With the clutch pedal fully depressed, select the appropriate gear (forward or reverse), release the clutch pedal slowly while depressing the throttle pedal.

As you release the clutch pedal you will notice after the pedal has been partially released the vehicle begins to move. When the vehicle begins to move, give the throttle a little more gas and at the same time keep releasing the clutch pedal.

When the vehicle gains enough speed, depress the clutch pedal and shift to the next higher gear and so on.

When you shift gears remember that as you push in the clutch you need to release the throttle pedal.

***DO NOT* drive with the clutch pedal partially depressed.**

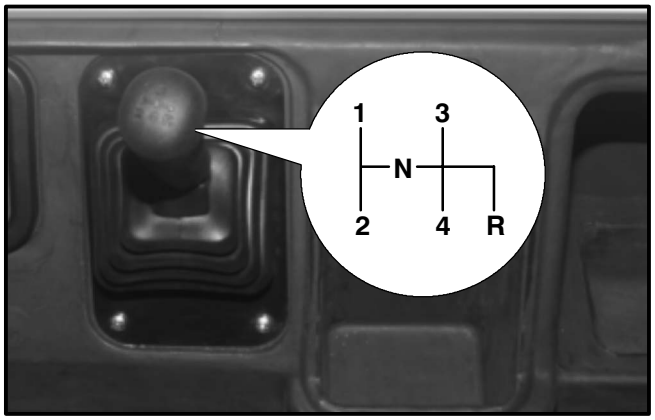


Figure 23
Gear Shifting Pattern

You ***can*** down-shift from fourth to third and from third to second and so on while the vehicle is moving as long as **the engine's speed is decreasing.**

Remember, ***before*** shifting to ***any*** gear you have to ***depress*** the clutch pedal ***before*** you shift to that particular gear.

NOTICE

- ***DO NOT*** push in the accelerator at the same time you are pushing in the clutch while shifting to a higher or a lower gear (downshifting).
- ***Only*** downshift if the vehicle is at a complete stop or if the engine's speed is decreasing.

ENGINE BREAK IN

The service life of your engine is dependent upon how your engine is operated during the first 50 hours of operation.

Avoid jack-rabbit starts

Do Not race the engine

Do Not adjust governor settings

Properly maintain the cooling system and engine oil level

SUZUKI 970 ENGINE

Max. Engine Speed . . . . . 3600 RPM

Max. Ground Speed . . 17.6 MPH (28.3 Km/h)

ALWAYS:

1. Idle and warm up your engine for at least 1 minute.
2. Use care not to overload your engine.

The engine governor controls are preset to control engine and ground speeds to design limits.

WARNING

- **To prevent premature engine failure and speeds greater than design limits, *NEVER* alter the governor controls in any manner to increase engine speed beyond recommended maximum R.P.M.**

STOPPING, PARKING (LEAVING) THE VEHICLE

Before you leave the operator's seat, do the following things in the order shown below.

1. Bring the vehicle to a ***COMPLETE stop*** and hold in position with the service brake while depressing the clutch pedal. When bringing the vehicle to a stop, apply the brakes until the vehicle has slowed ***then*** push the clutch in and apply the brakes until the vehicle comes to a complete stop.

   If the clutch pedal is not depressed (and the vehicle is in any gear except neutral) the vehicle will "jump" if the engine is not allowed to come to a complete stop.

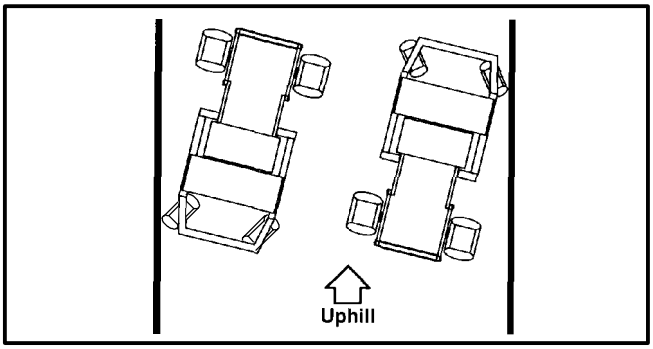


Figure 24
Vehicle parked With Front Wheel(s) Curbed

2. Turn the key switch to the "OFF" position while holding the clutch pedal down until the engine is ***COMPLETELY STOPPED***. Place the vehicle in first gear and remove the key to prevent unauthorized use of vehicle.
3. ***Apply*** the ***parking brake.*** The parking brake ***is NOT*** automatically applied.

   When parking the vehicle or starting the engine on an incline, the front wheel should be **"curbed"** whenever possible (See Fig 24).

TOWING THE VEHICLE

If for any reason the vehicle needs to be towed, follow the guidelines below to properly tow the vehicle.

If towing the vehicle with a tow-rope or a chain, an operator is required to steer the vehicle and to control the brakes.

Attach a tow line only to the front vertical frame member on either side of vehicle as shown in Figure 25.

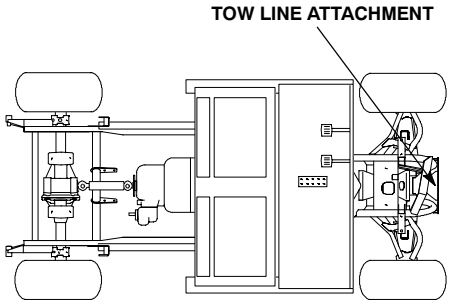
Make sure the drive transmission is in **"neutral"** (out of gear) and the park brake is released.

With the tow line attached, have the towing vehicle move forward until the tow line becomes tight.

While towing, try to keep the tow line taught at all times. Be cautious going down inclines and while turning corners.

WARNING

- **NEVER accelerate or stop suddenly when towing a vehicle.**
- **NEVER change the direction of the vehicle abruptly or make sharp turns on an incline when towing a vehicle.**
- **When towing a vehicle, adjust your speed to the conditions (dry, hilly, wet, icy, etc.)**
- **NEVER tow the vehicle faster than 5 M.P.H. (8 km/h). Towing at excessive speed could cause either vehicle to lose proper steering control.**



A Front Bumper Accessory (Part No. 894778) is Available For Use With the Turf Truck. If a Front Bumper is Mounted on Your Vehicle, Make Sure to Follow the Instructions Included With the Bumper For Proper Connection of the Chain or Tow Rope.

Figure 25
Tow Line Attachment Locations

JACKS, JACKING LOCATIONS AND USING A HOIST

A scissors type jack or a floor jack with a 1 1/2 ton (minimum) capacity that can be lowered to 3 3/8" (86mm) height is required.

The jacking locations are shown In the chart illustration on the following page.

Put the gear selector in 1st gear (manual transmissions). Apply the park brake. Raise the vehicle ***ONLY*** enough to perform maintenance required.

Place a jack in the appropriate location (See Fig. 26) and place a block behind (or in front) of the tire ***diagonally opposite*** the side which is being raised (See Illustration below).

WARNING

- ***DO NOT*** **rely solely on hydraulic or mechanical jacks for support. Use appropriate jack stands or equivalent for supporting the vehicle. If using a hoist, raise vehicle to appropriate height and support using jack stands or equivalent support.**
- ***Never*** **place feet, hands or any part of your body under the vehicle when raising it with a hoist.**

Jack the vehicle to the appropriate height and place jack stands or equivalent support beneath the frame near the jack. Lower the jack and allow the vehicle to rest on the jack stands.

NOTICE

- Raise the vehicle only enough to perform the maintenance required.

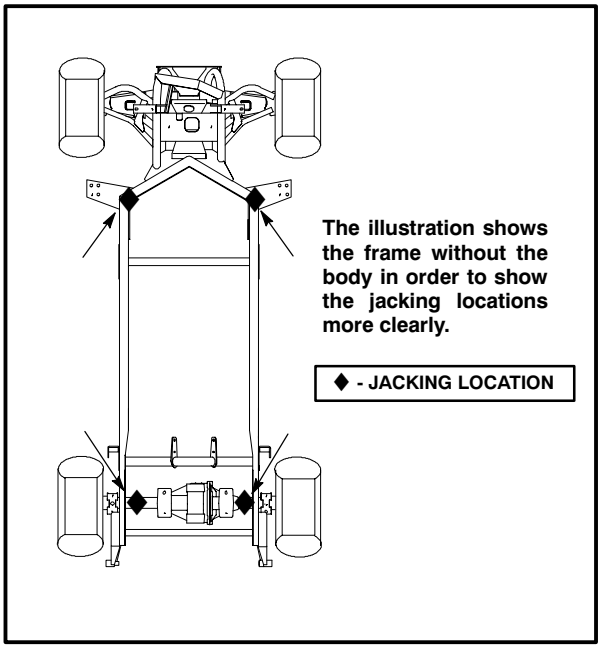
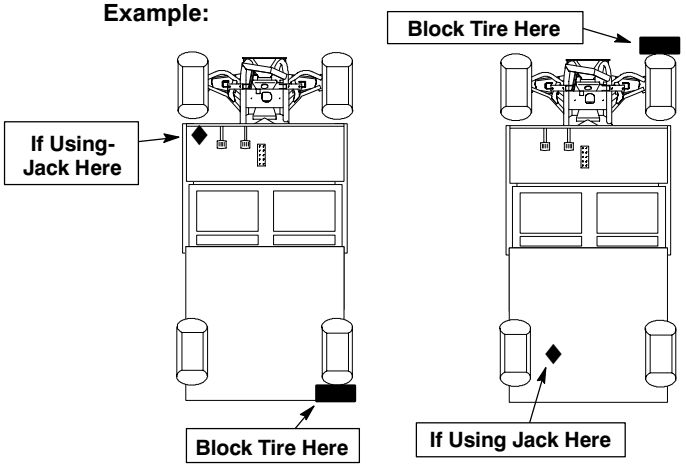

The illustration shows the frame without the body in order to show the jacking locations more clearly.
♦ - JACKING LOCATION

Figure 26
Jacking Locations

Make sure to block the tire *diagonally opposite* of the side which is being raised.

Example:



NOTICE

- When using a hoist to raise the vehicle, use the same procedure for supporting the frame and blocking the tires as you would when using a jack.
- To prevent damage to the vehicle or attached accessory, ***NEVER*** use a hoist to raise only ***one corner*** of the vehicle. ***ALWAYS raise BOTH front or rear corners equally.***

TIRE REMOVAL

With the vehicle on a flat level surface (if possible), put the gear selector in first gear and apply the park brake.

Place a block in front of (or behind) the tire diagonally opposite the side which is being raised **(Refer to the "Jacks, Jacking Locations and Using a Hoist" section in this manual).**

Raise the vehicle only enough to perform the maintenance required.

1. Remove the wheel retaining nuts (See Fig. 27) and remove tire and wheel assembly from hub.
2. Install the tire and wheel by reversing the above sequence. Make sure valve stem (See Fig. 27) is located toward the outside.
3. Tighten wheel retaining nuts to 70 to 100 ft. lbs. (95 to 140 N·m) torque.

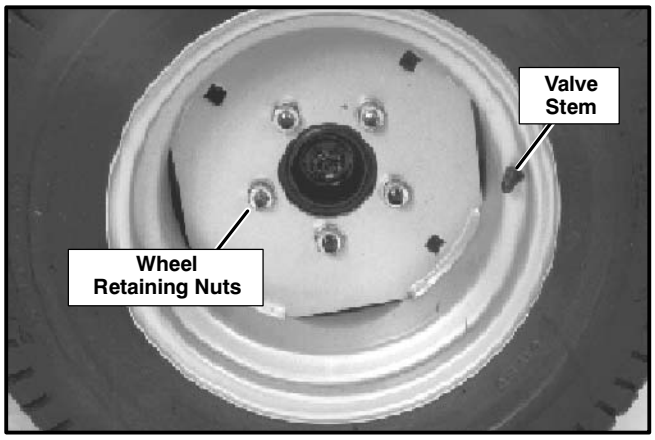


Figure 27
Wheel Retaining Nuts and Valve Stem

WARNING

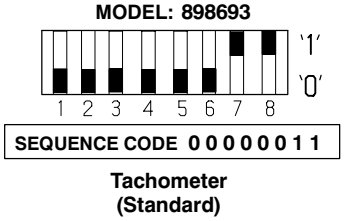
- ***DO NOT* rely solely on hydraulic or mechanical jacks for support. Use appropriate jack stands or equivalent for supporting the vehicle. *Never* place feet, hands or any part of your body under the vehicle when raising it.**

DASH PANEL DIPSWITCH SETTINGS

Remove the four (4) screws securing the instrument panel to the dash.

Pull the instrument panel out and tilt forward to gain access to the rear of the panel (See Fig. 28).

Using a small blade screwdriver or similar tool, push the switch levers either up or down using the following sequence codes (the top of the dash panel can be referenced as "position 1").



Tachometer (Standard)

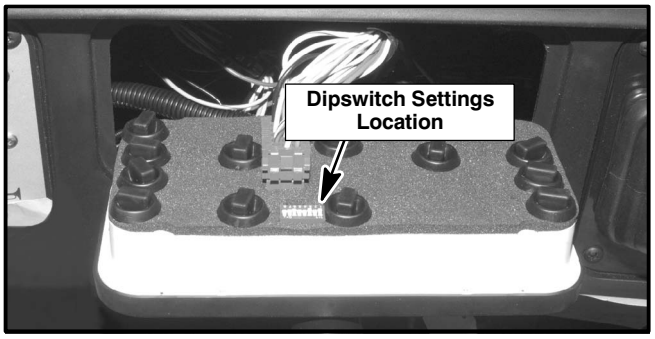


Figure 28
Dash Panel Dipswitch Location

SERVICING THE VEHICLE

AIR CLEANER ELEMENT

This is a large capacity dry type air cleaner with a replaceable element.

We recommend the filter element be **replaced** before engine performance is effected. This may occur at **250 hours** of service in very dirty operating conditions or at **500 hours** in normal operating conditions.

We ***DO NOT*** recommend cleaning the filter element because of the possibility of damaging the element.

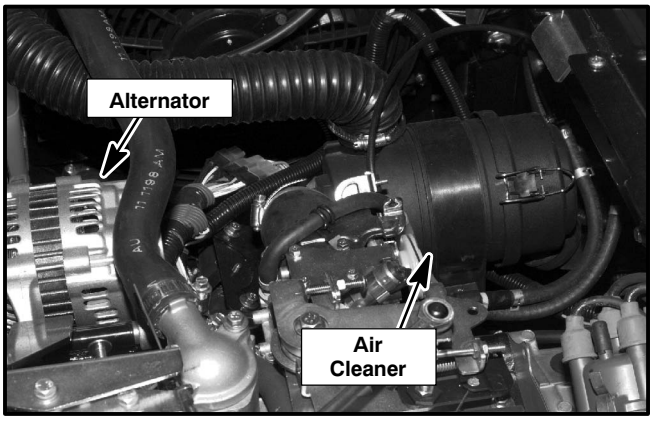


Figure 29
Air Cleaner Assembly

Air Cleaner Complete . . . . . Part No. 892679
Air Cleaner Element . . . . . Part No. 840352

WARNING

- **Before servicing or doing any maintenance work around the engine area, make sure the engine has had time to cool. Serious burns can result if the engine or surrounding area is hot.**

Checking and Installing the Element

Tilt the engine cover forward and locate the air cleaner on the right rear of the engine (See Fig. 30).

To remove the air cleaner element release the latches securing the cover to the air cleaner assembly. Remove the filter element.

Check the element for damage, pin holes, etc. by placing a light source such as a flashlight inside.

Clean dust from inside of housing with damp cloth, making sure dust does ***NOT*** enter air intake.

Check all gaskets to be sure they are ***NOT*** damaged or loose.

Replace the element if it is damaged or is excessively clogged with dirt and/or debris.

Insert element in housing open end first.

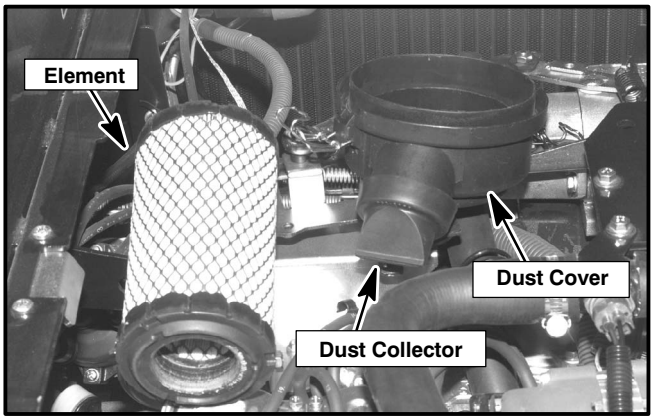


Figure 30
Air Cleaner Element and Dust Cover
(Shown Removed From the Housing)

Position the cover so that the collector is pointing down. Clamp cover into position with collector pointing down.

- ***DO NOT*** use bent or dented air cleaner assemblies.
- ***DO NOT*** use bent or damaged air cleaner element.
- The dust collector empties automatically when properly installed with collector down.

A dirty, clogged or damaged air filter will cause the engine to start hard as well as run rough and sluggish. Don't forget to check the air cleaner element if the engine does not run smoothly and other problems cannot be found.

ACCESS PANELS

There are two access panels located under the front hood and one located in the middle of the floorboard.

Remove the screws securing the panel to the fire wall to gain access to the shifter linkage and some of the electrical wiring for the instrument panel.

Remove the screws securing the panel to the bottom of the front cowl to gain access to the front suspension.

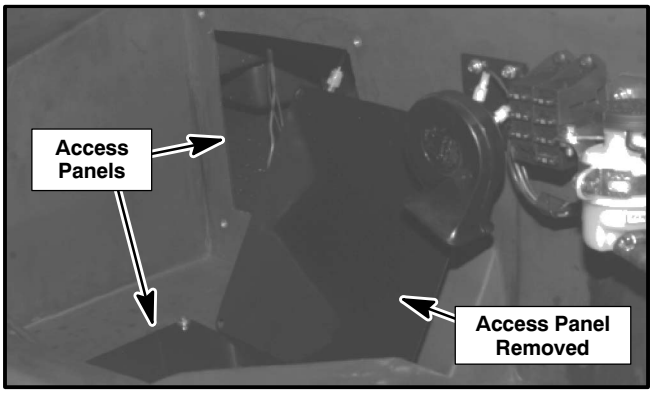


Figure 31
Access Panels Under Front Cowl

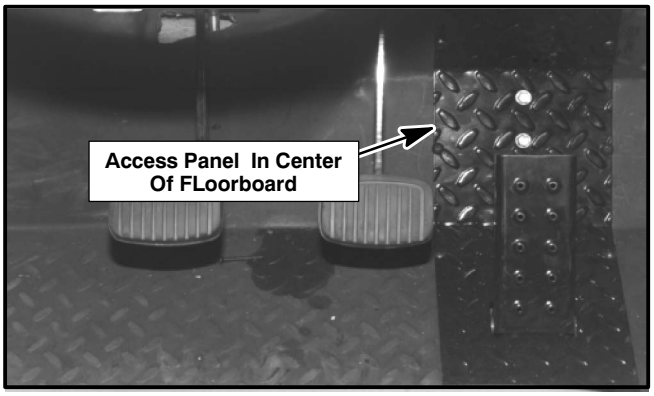


Figure 32
Access Panel on Floorboard

Remove the screws securing the panel to the floorboard. This will give you access to the throttle cable, linkage, electrical wire harness, as well as the brake lines which run to the master cylinder.

It will be necessary to remove the accelerator pedal in order to completely remove the center floorboard panel.

FRONT COWL ACCESS

The front cowl opens to gain access to the fuse panel, the horn and the master cylinder reservoir.

To open the front cowl, locate the release lever at the upper left corner near the left side headlight.

Pull the lever to the right to release the front cowl latch and at the same time pull up on the front cowl.

Open the cowl allowing it to rest against the rops structure (if equipped) or the steering wheel.

The front cowl will not “spring up” when the release lever is pulled. The cowl will have to be raised when the latch is released.

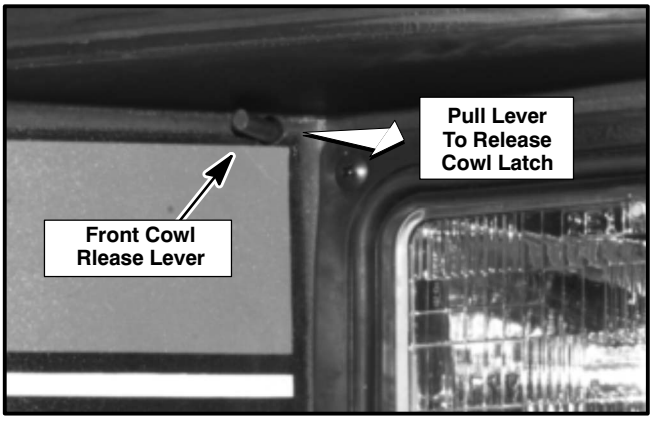


Figure 33
Release Lever For Front Cowl

BELT TIGHTENING AND REMOVAL

The engine and pump belt tension should be checked after the first 24-48 hours of operation. Ideal tension for the pump belt is the lowest amount of tension the belt will not slip under peak load conditions.

Engine belt should be tightened so there is 1/4” (6.3 mm) to 1/2” (12.7 mm) of flex at the midway point in the longest span of the belt.

Please refer to Page 57 for belt tightening and removal procedures.

LUBRICATION RECOMMENDATIONS

Power Steering .... Power Steering Fluid (GM)
Brake Fluid ..... Dot 3
Pressure Gun Grease ..... Lithium Base
Transmission Fluid . SAE EP 80-90 Gear Lube
Differential Fluid ... SAE EP 80-90 Gear Lube

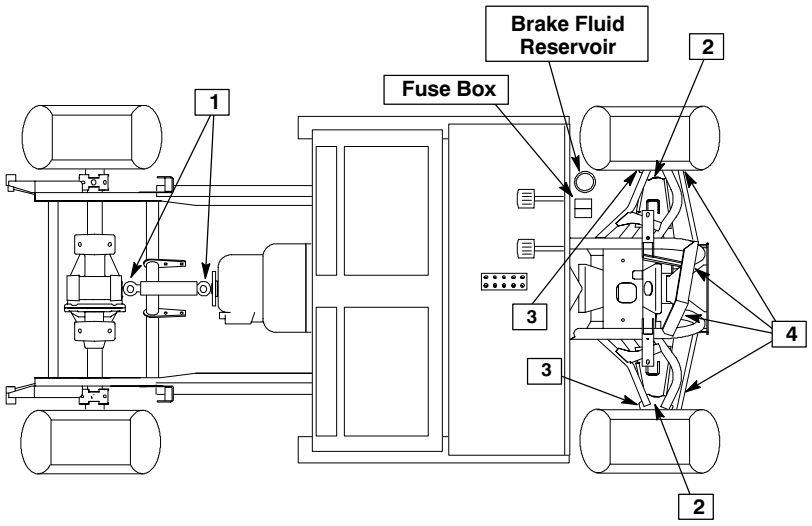
LUBRICATION CHART

Lubricate all chassis fittings with *lithium base* pressure gun grease every 100 hours or 1000 miles.

Ref. No.	Lubrication Area	Number Of Grease Fittings	Ref. No.	Lubrication Area	Number Of Grease Fittings
1	Drive shaft	2	3	Lower Ball Joint	2
2	Upper Ball Joints	2	4	Tie Rod Ends, 4-wheel	4

NOTICE

Reference to item 1, Too much grease can damage the seals.



BULBS, FUSES AND FLASHER

BULBS:	Voltmeter light		No. GE 658	
	Oil pressure warning light		No. C194	
	Tachometer		No. C161	
	Water temperature gauge light		No. GE 658	
	Fuel gauge light		No. GE 658	
	Hour Meter Light		No. GE 658	
	Turn signal(s), front (accessory)	32 CP	No. 1156	Part No. 837670
	Taillight(s)	32-4 CP	No. 1157	Part No. 822049
	Headlight(s)	65-45 Watt	No. H6545	Part No. 837303
FUSES:		10 AMP		Part No. 836892
		15 AMP		Part No. 849983
		20 AMP		Part No. 826000
		30 AMP		Part No. 833038
FLASHER:	Turn signal (accessory)			Part No. 825501

FUSES

The fuse box is located under the front cowl (See Fig. 34).

The fuses protect the electrical lighting circuits and accessory circuits such as the windshield washers, turn signals etc.

When replacing fuses, be sure the replacement fuse is the same amp as the fuse being replaced.

Pull straight out to remove a fuse. To install a fuse, push the new fuse into the appropriate fuse slot.

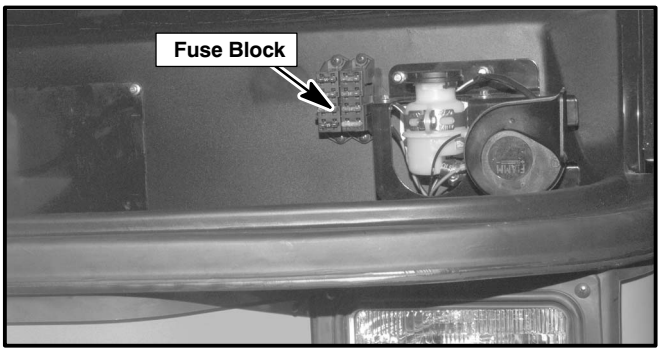


Figure 34
Fuse Block Located Under Front Cowl

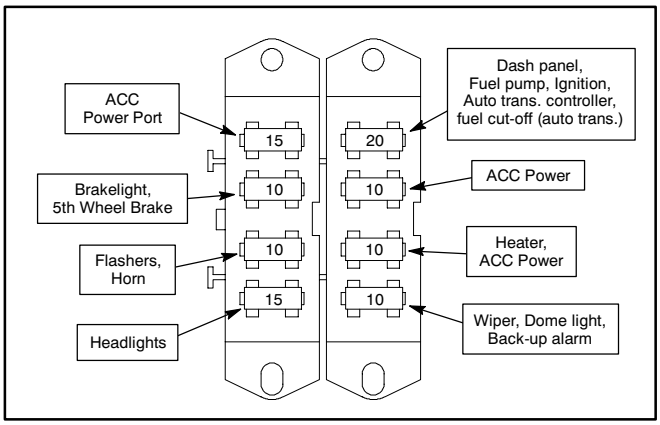


Figure 35
Fuse Box Panel

CAUTION

- **Electrical failure and/or fire can result if the fuses are not the proper amperage.**

BULB REPLACEMENT, DASH PANEL

Remove the four (4) screws securing the instrument panel to the dash.

Pull the instrument panel out and tilt forward to gain access to the rear of the panel (See Fig. 36).

Determine which bulb will be replaced. Rotate the bulb holder 1/4 turn, pull up and remove holder and bulb. Remove the bulb from the holder and replace with the appropriate bulb. Reverse this sequence to install the bulb and holder.

Use the number printed on the bulb to obtain the correct replacement bulb.

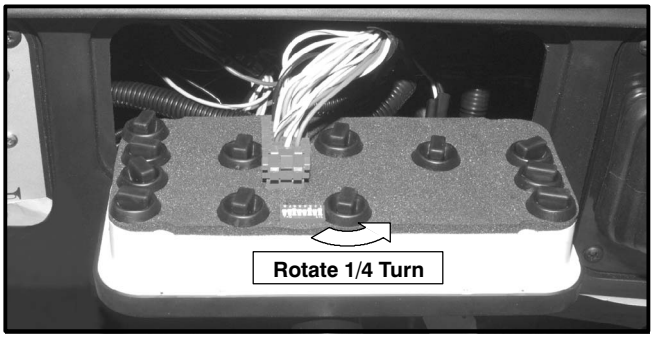


Figure 36
Dash Panel Bulb Removal

MAINTENANCE GUIDE

The following maintenance charts have been compiled as a general guideline for service intervals, based on hours of operation. Refer to the Engine Owner's Manual for further service and maintenance schedules and intervals.

Some of the maintenance procedures below also include vehicles other than the Suzuki 970.

Maintenance Operation	Daily	First 35 Hrs	First 50 Hrs	Every 75 Hrs or 2 months	Every 100 Hrs or 3 months
Check engine oil level	●				
Check cooling system coolant level	● ƒ				
Clean radiator intake screen	●				
Check water separator, drain as required (Perkins Diesel)	●				
Check fuel level	●				
Check engine for loose parts, damage and leaks	●				
Check exhaust color (Perkins Diesel)	●				
Check for engine noise; vibration	●				
Check tire pressure	●				
Change engine oil and filter (Suzuki only)			●		● *
Change engine oil (Perkins Diesel)		●		● *	
Change engine oil filter (Perkins Diesel)		●		● *	
Check valve clearance (to be done by authorized dealer)		●			
Check engine idle speed		●			
Check power steering fluid		●			●
Change fuel filter					●
Lubricate chassis (see lube chart)					●
Check governor oil level (Suzuki engines)					●
Check differential oil level					●
Check transmission fluid level					●
Check hydraulic tank fluid level (Turf Models)					●
Check brake fluid (BF)					●
Check brake adjustment					●
Check clutch adjustment					●
Change differential oil					After first 100 hrs.

*** Depending on operating conditions, the engine oil and engine filter may need more frequent replacement.**

ƒ If coolant level is low add a 50/50 mixture of water and anti-freeze, *NEVER* add straight anti-freeze to the coolant system.

OIL FILTER:
Suzuki 970 Part No. 2701908

FUEL FILTER:
Suzuki 970 Part No. 15410-50F00

Maintenance Guide (con't.)

Maintenance Operation	Every 200 Hrs or 6 months	Every 400 Hrs or 9 months	Every 600 Hrs or 12 months	Every 1500 Hrs	
Replace air cleaner element	●‡				
Check valve clearance (See authorized dealer)	●				
Check fan belt and tension	●				
Inspect radiator hoses and clamps	●				
Change coolant		●			
Replace hydraulic system filter			●		
Change hydraulic oil (tank only, Turf Models)			●		
Clean battery and terminals.			●		
Check alternator			●		
Repack front and rear wheel bearings			●		
Check starter motor brushes			●		
Check brake linings			●		
Change differential fluid			●		
Drain and replace radiator coolant			●		
Check engine idle speed			●		
Check glow plugs (Perkins Diesel)			●		
Check injection pump and timing (Perkins Diesel)			●		
Check fuel hoses and clamps			●		
Check all belts for tightness and cracking			●		
Adjust front brakes (4 wheel only)			●		
Replace timing belt (Suzuki engines)				●	
Change transmission fluid			●		
Check fuel hoses and clamps			●		
Check spark plugs for fouling (clean and gap as necessary)			●		

⁎ Depending on operating conditions, the engine oil and engine filter may need more frequent replacement.
‡ Depending on operating conditions, the air filter element may require more frequent replacement.

AIR CLEANER ELEMENT:
Suzuki 970 - Part No. 840352

SPARK PLUGS: Suzuki 970
gap .032" - .035" (0.8 mm - 0.9 mm)
Part No. 09482-00131 NGK BP5ES
OR
Part No. 09482-00123 Denso W16EX-U

BELTS, Suzuki 970:
Part No. 67-048 (governor, jack-shaft)
Part No. 836854, 42" (1067 mm) (alt., pwr strng.)
Part No. 67-028 (centrifugal pump)

TIMING BELT, Suzuki 970 - 12761-78400

The centrifugal pump & jack-shaft belts can be ordered directly from SDI.
Phone (559) SDI-5555 or Fax (559) SDI-5591

BRAKES

Service Brakes

WARNING

- **Improper maintenance of the brake system may result in loss of vehicle control by the operator. Losing control of the vehicle due to brake loss may cause vehicle damage and/or injury to the operator or bystanders.**

This vehicle is equipped with either four wheel or two wheel (rear only) hydraulic brakes and a hand operated park brake lever.

Keep your brake system clean and properly maintained.

If the brakes ***Do Not*** stop the vehicle properly, they must be repaired before the vehicle is operated again.

The brake fluid master cylinder reservoir is located under the front cowl.

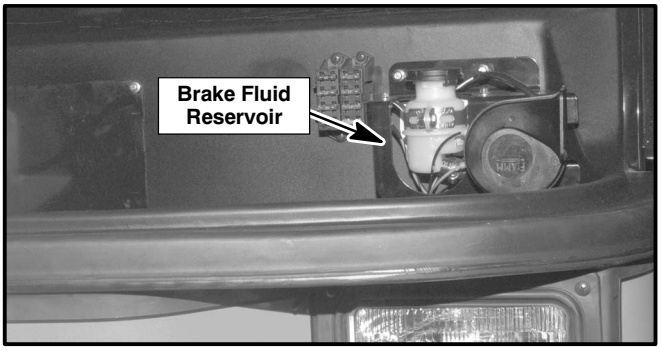


Figure 37
Brake Fluid Reservoir Located Under Front Cowl

The fluid level must be kept within the MIN (minimum) and MAX (maximum) levels as shown in Figure 38.

If the brake fluid level indicator light (See Fig. 39) comes on and remains on, check the brake fluid level in the reservoir.

When it is necessary to add fluid, use a **DOT 3 type** brake fluid.

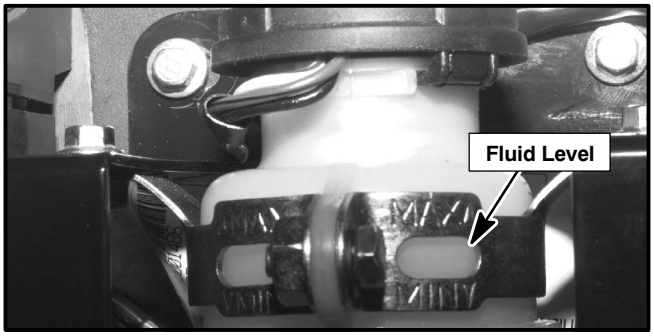


Figure 38
Brake Fluid Level Reading

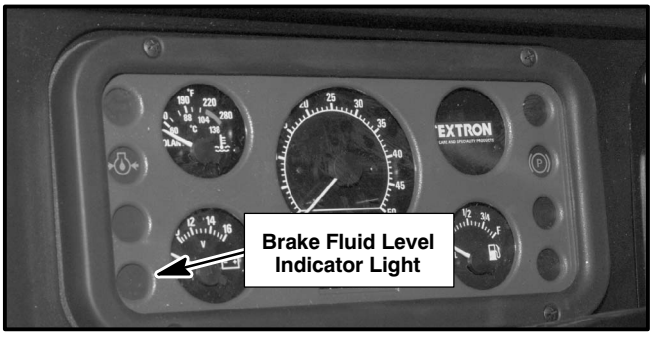


Figure 39
Brake Fluid Level Indicator Light

If the brakes do not hold properly, if they feel spongy ***or*** if the brake fluid reservoir is allowed to "run-dry", it may be necessary to bleed the brake lines in order to get fluid back into the system. Follow the steps below to properly bleed the brake system.

Four Wheel Brakes

When bleeding the system with four wheel brakes, bleed the **left rear** brake first ***then*** the **right rear,** then the **right front** and finally the **left front.**

Attach a hose to the bleeder screw on top of the left rear dust shield and place the other end of the hose in a container to catch the fluid run-off when bleeding the system.

Most communities have a disposal system for this type of refuse. ***Please dispose*** *of fluids properly.*

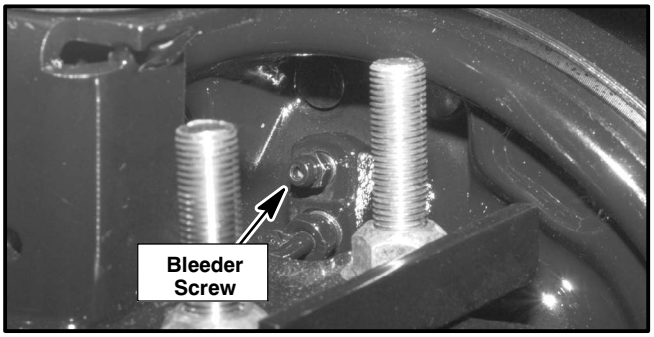


Figure 40
Bleeder Screw on Top of Dust Shield

Four Wheel Brakes (con't.)

Loosen the bleeder screw. Have an assistant push down on the brake pedal and hold pedal down. Tighten the bleeder screw and release the brake pedal. Loosen the bleeder screw again, press down on the brake pedal, hold pedal down and tighten the bleeder screw, release pedal. ***Do Not*** release the brake pedal until the bleeder screw is tightened otherwise air will be sucked back into the brake lines.

Continue this procedure until all air bubbles are purged from the system and a steady flow of fluid comes from the brake line. Repeat the procedure on the opposite side of the unit.

PARK BRAKE

The park brake applies the brakes to **both** rear wheels.

To engage the brake, pull up on the lever until park brake is applied (the park brake lever will be at an approximate 45° angle when applied).

To release, slightly pull up on the handle, push the button at the end of the lever and while holding the button in, lower the lever to it's original position.

Park Brake Adjustment

Raise the engine cover and locate the park brake cable and bracket beneath the console panel (See Fig. 42).

With the park brake released (brake lever down) tighten the adjustment nut a couple of turns and apply the park brake, continue adjustment until the brake lever is at an approximate 45° when the brake is applied.

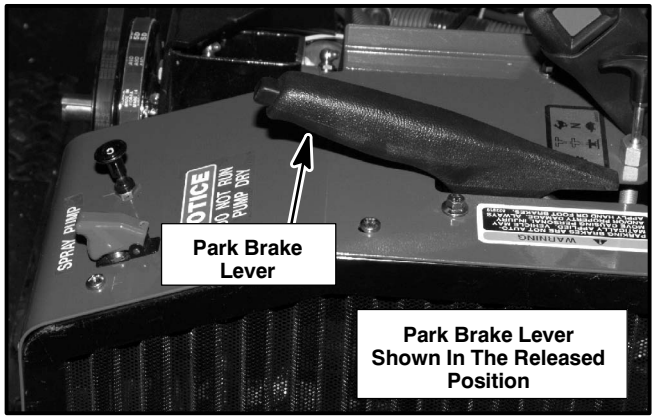


Figure 41
Park Brake Lever Location

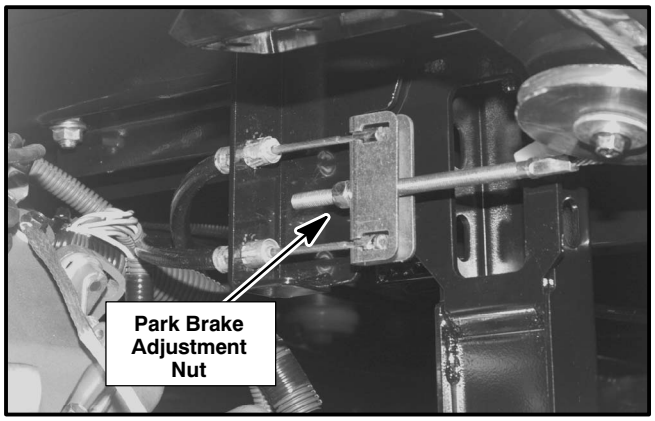


Figure 42
Park Brake Adjustment Nut

POWER STEERING (4-WHEEL MODELS ONLY)

WARNING

- **Before servicing or doing any maintenance work around the engine area, make sure the engine has had time to cool. Serious burns can result if the engine or surrounding area is hot.**

Power Steering (con't.)

The power steering reservoir on the Suzuki 970 engines is located on the right side of the engine, below and to the right of the alternator.

The level in the reservoir should be checked after the **first** 35 hours and then ***again*** after another 35 hours, after that the level should be checked every 100 hours. Use **GM power steering fluid** to maintain the correct fluid level. ***Do Not*** **overfill.**

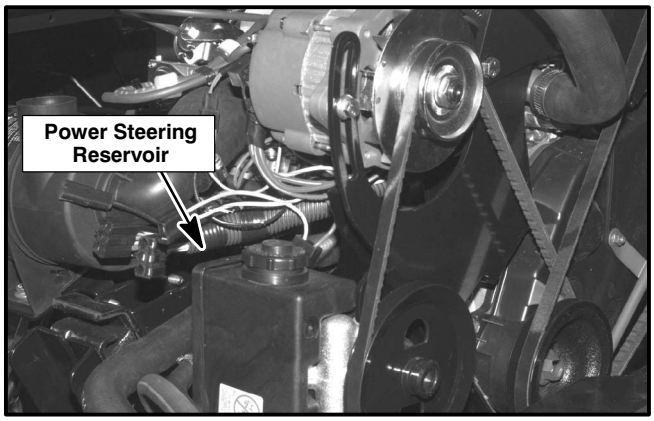


Figure 43
Power Steering Reservoir (Suzuki 970 Engine)

Remove the power steering reservoir cap w/dipstick.

When checking the fluid level for the first time at the beginning of the day, the fluid level should be at the "cold" mark on the dipstick. When checking the fluid level after the engine has been running and the fluid is warm, the level should read between the "cold" and "hot" marks.

GOVERNOR OIL LEVEL (Suzuki 970 Engines)

Check the oil level in the governor after ***every*** **100 hours** of use. To check the level, remove the plug from the back side of the governor. Oil should be up to the level of the plug opening.

If the fluid level is low, remove the plug from the top of the governor and add a 20W engine oil through the opening until oil begins to drip out from the hole on the back of the governor.

Use Teflon tape or a Permatex 20 sealant (or equivalent pipe thread sealant) on the threads of the plugs before replacing them.

Torque plugs to 95 ± 10 in.lb.

Governor Oil Capacity . . . . . 1.5 oz. (44 ml)
Oil Type . . . . . SAE 20W engine oil

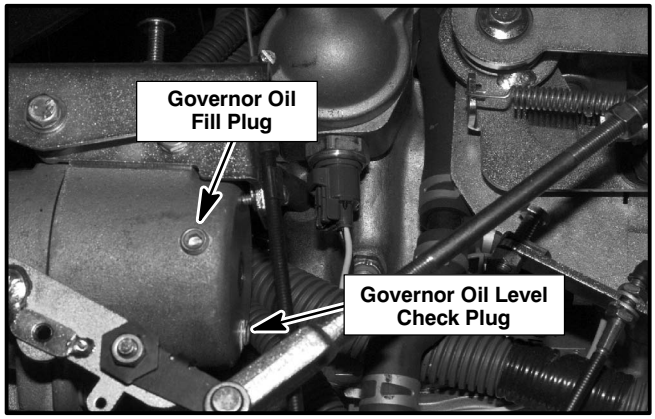


Figure 44
Governor Fill Plug (Suzuki Engine Only)

DIFFERENTIAL (14.21:1)

The differential fluid should be checked every **100 hours (or 3 months)** and ***changed*** after the first **100 hours.**

After the first change at 100 hours the fluid should be **changed** every **600 hours (or 12 months).**

Differential 14.21:1 (con't.)

Differential Fluid Capacity . . 5.2 pints. (2.5 L)
Fluid Type . . . . . SAE EP 80-90 Gear Lube

To check fluid level, remove the filler plug from the front of the differential.

Fluid should be level with the bottom of the filler hole. If level is low, add gear lube until the appropriate level is reached (fluid will begin to leak from the filler hole when full level is reached). Replace filler plug.

To drain the differential fluid, remove the drain plug from the bottom rear of the differential and drain. Replace drain plug and add fluid to the recommended level.

When draining and filling the differential, use a pipe thread sealant on the plug threads before replacing them.

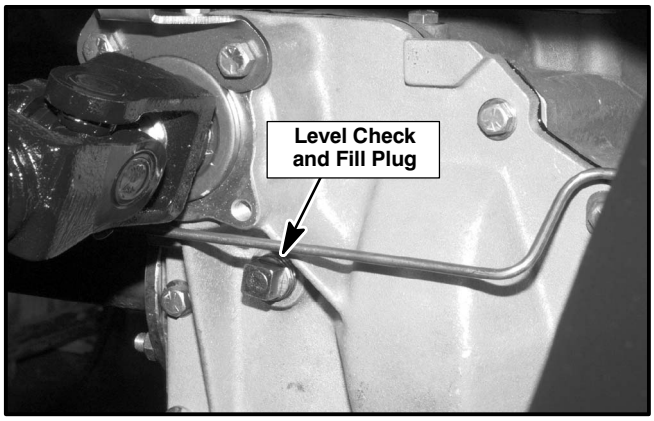


Figure 45
Differential Filler and Level Check Plug

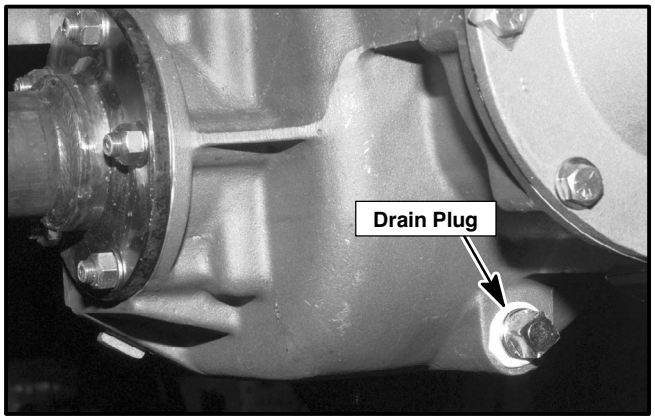


Figure 46
Differential Drain Plug

DRIVE TRANSMISSION

Maintaining proper lubrication level in the transmission is very important to the life of the gears and bearings.

Check transmission fluid level every **100 hours (or 3 months).**
Change transmission fluid every **600 hours** or **(12 months).**

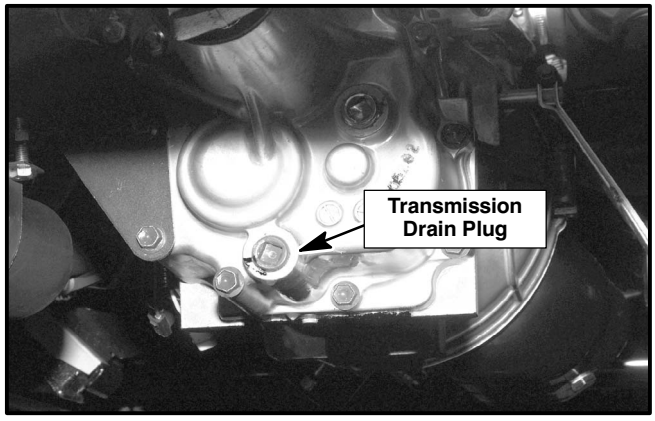


Figure 47
Transmission Drain Plug

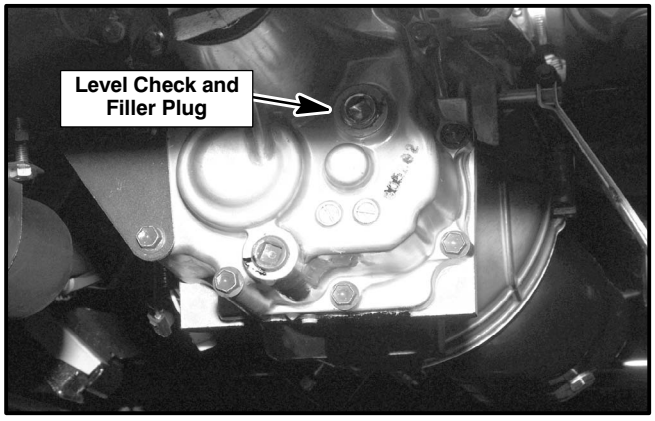


Figure 48
Transmission Fill Plug

Drive Transmission (con't.)

Transmission Capacity: 1.35 qts. (1.3 L)
Recommended Lubricant: SAE EP 80-90 Gear Lube

The filler plug is located on the rear of the transmission. When removed, the filler plug opening is used to determine proper fluid level.

The fluid level must be level with the bottom of the filler plug hole.

If level is low, add fluid (through the filler hole) until it begins to flow from the filler hole. Reinstall the plug.

To drain the transmission fluid, remove the drain plug on the rear of the transmission.

When draining and filling the transmission, use a pipe thread sealant on the plug threads before replacing them.

BULB REPLACEMENT, TAILLIGHT

Remove the two (2) screws securing the taillight lens to the taillight.

Remove the bulb and replace with a No. 1157 bulb. Replace the lens cover making sure the gasket is positioned correctly.

To remove the taillight from the vehicle, remove the two (2) nuts and shakeproof washers securing the taillight to the frame.

Taillight Assembly . . . . . Part No. 893602
Bulb . . . . . Part No. 822049
Lens Screws . . . . . Part No. 312288
Lens and Gasket . . . . . Part No. 829099
License Illuminator Lens . . . Part No. 829099

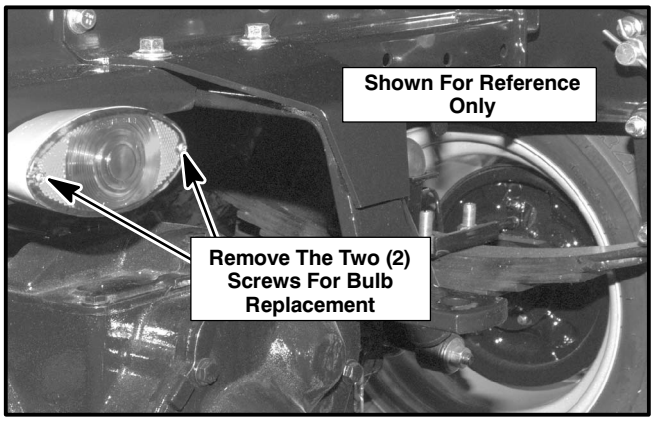


Figure 49
Taillight Bulb Replacement

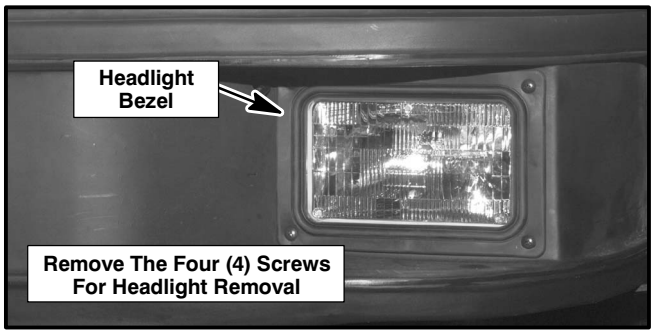


Figure 50
Headlight Removal

HEADLIGHT REPLACEMENT

Remove the four (4) screws securing the headlight bezel to the front cowl (See Fig. 50).

Pull the headlight and bezel from the front cowl opening. Disconnect the electrical connector from the rear of the headlight and remove the headlight from the bezel. Replace headlight and install in the reverse sequence used for removal.

Headlight . . . . . Part No. 837303
Bezel . . . . . Part No. 841428
Mounting Screws . . . Part No. 800943

SDI SPRAY TANK SPECIFICATIONS

Specifications subject to change without notice.

CAPACITIES

Spray Tank . . . . . 300 gal. (1135.5 L)

TANK

Multiple layers of isophthalic resin and chopped fiberglass, hand rolled for maximum density and strength.

External liquid level sight glass tube with calibration markings in gallons.

Reinforced nylon fittings.

Exterior:

Ransomes Green gel-coat with UV inhibitor.

Interior:

Sealed with chemical resistant isophthalic resin.

Lid:

16" (406 mm) twist-lock (1/8 turn), bullet type ball check vent, V-gasket rim seal, nylon mesh strainer basket with reinforced ribs.

Sump Pump:

Anti-vortex sump plate, triple venturi volumetric agitator jets, ceramic orifice cones.

FRAME

High strength welded steel, attaches directly to vehicle frame.

PLUMBING

Reinforced nylon, brass and SST.

Hoses are rubber or reinforced plastic/nylon PVC blends.

PRESSURE

100 gpm, 0-130 PSI. variable range based on vehicle's engine speed (RPM's)

BOOMS (Equal Flow)

Wet booms feature steel support frames, variable adjustment mounting and height adjustment brackets.

Equal flow design includes 304SSt tubes with nylon end caps, brass and nylon feeder saddles with 3/4" inlet and 3/4" feed hoses.

Nozzle bodies are polypropylene, 10 PSI diaphragm check assembly, 1/4 turn on/off locking cap with gasket and 50 mesh SST strainer screen with plastic support cage.

Tips are XR8003VK extended-range ceramic orifice, 10 degree offset with Visiflo color coding (unless otherwise specified at time of order).

Booms have a breakaway hinge with forward and reverse action and fold-up for transport, Adjustable dampening springs are standard (there is also an electronic gear driven ball screw actuator to raise and lower the boom available).

PUMP

Belt driven, cast-iron centrifugal with nylon impeller.

Mounted directly to vehicle frame and powered by the vehicles engine.

RECOMMENDED SAFETY EQUIPMENT

Special safety equipment is required to prevent accidental exposure or poisoning and should be worn at all times when spraying chemicals. Consult your chemical supplier for proper material handling and compatibility.

The following is strongly recommended, however other safety equipment may be required. Always refer to chemical manufacturers Material Data Sheet (MDS) that is available for all chemicals.

Spray Suit - Full coverage arms and legs, free of rips or tears.

PVC/Nylon Gloves - Protect hand and sleeve openings.

Goggles - To cover eyes/glasses for better protection

Shield - To prevent accidental facial contact with chemicals.

Mask/Respirator - Approved canister type with appropriate filter cartridges for chemical being used.

WORK AREA SAFETY RECOMMENDATIONS

Read this section carefully and thoroughly in order to become familiar with the proper safety techniques used when operating the sprayer.

Be sure to obtain an operating demonstration from your Cushman dealer before attempting to drive the vehicle.

***You,* the operator** must take the time to familiarize yourself with the function of all vehicle controls as well as the operating characteristics of the vehicle. This is best accomplished through careful application of proper operating procedures.

Your safety and the safety of those around you depend on your care and good judgement in operating and maintaining this vehicle.

WARNING

- **SDI strongly recommends that you read the Operator's Manual completely. Be confident and sure of your skills before operating the SprayTek.**
- **Use caution when turning and braking, avoid jack-rabbit starts. The large liquid payload reacts differently during vehicle movement, than an equal sized dry load.**
- ***NEVER* operate this equipment until you have read and understand the operator's manual.**
- **This is heavy equipment that may cause serious injury or death to you the operator or bystanders if improperly used or overturned.**
- ***NEVER* allow children to operate the vehicle.**
- **ONLY trained and authorized persons shall operate this vehicle.**

1. **Chemical Storage & Sprayer Storage - check local regulations (regulations vary by region).**
2. **Fill/Mix and Load Station - this area should have run-off containment and not be in a high traffic area. *Do Not* allow non-sprayer personnel to enter the mix and load area. All mix and load operations should be performed with proper safety gear in place. Refer to chemical manufacturer's Material Data Sheet (MDS) for recommended protective procedures.**
3. **Water Supply - if using a public water system, we highly recommend using anti-backflow protection on fill hoses and water source outlets. An Air Gap Filler (anti-siphon) is available as an option.**
4. **Fill Hose - the fill hose should *never* be put into the spray tank, this could contaminate the hose (a habit that needs to be avoided).**
5. **Overflow/Overfilling - we recommend a recovery or containment system. If none is available, be certain the run-off does not contaminate public sewers or natural wet land areas. Check your local regulations.**
6. **Moving Mechanical Systems Parts - Keep hands and other body parts away from rotating pulleys and belts. Restrain loose clothing and use caution around moving parts when in-use.**
7. **Broken or Worn Components - follow recommended and safety and repair/maintenance schedules. *Do Not* operate this equipment without safety shields in place or if the equipment is not working properly. Proper operation is not only safer, it can save you money by properly applying the desired chemicals at the correct rate.**

Work Area Safety Recommendations (con't)

8. **Record Keeping - keeping proper records in regards to chemicals being used, batch size, time, date, areas treated, weather conditions and unusual occurrences can protect you and others should any problems occur after a turf application has been made.**
9. **Accidents/Problems - in case of accident, injury or unprotected exposure, notify your supervisor and if necessary, contact the poison control board, EPA, and/or local fire department to help with the situation.**
10. **Local/State Regulations - request the appropriate information, read and follow al local and state regulations for your area, regulations will vary by region. Be informed, not a victim!**
11. **Licensing - it is recommended that all spray technician operators secure a CPA (Certified Pesticide Applicators) license or equivalent. Check your local regulations.**

SDI SPRAY TANK IDENTIFICATION NUMBERS

THE FOLLOWING IDENTIFICATION NUMBERS MUST APPEAR ON ALL CORRESPONDENCE CONCERNING SDI sprayer tank.

The serial and model number for the spray tank is stamped on a name plate located on the front of the sprayer frame (right side) directly above the fuel tank (See Fig. 51).

NOTICE

- Reference to the ***front, rear, left*** and ***right*** sides of the sprayer tank are always determined by the ***operator's seated position.***

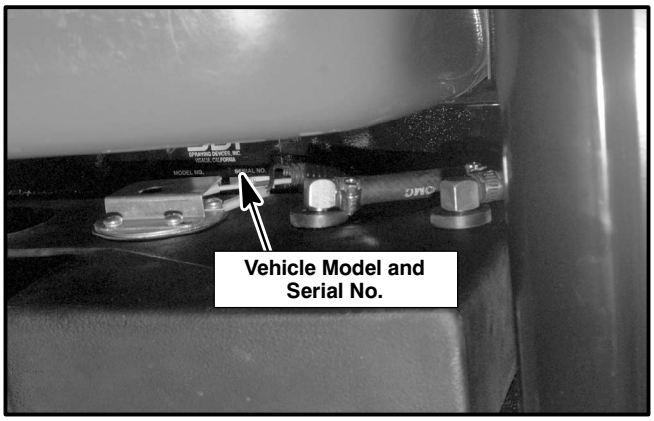


Figure 51
SDI Model and Serial No. Nameplate

SDI SPRAYER CONTROLS

There are three different boom accessories which can be used with this sprayer:

- a manually operated boom (Part No. 895066)
- an electric motorized boom (Part No. 893293), and
- an electronic boom with motorized valves (Part No. 895069)

The following information will show controls from all three systems (the boom systems ***do not*** come with the spray tank and will need to be ordered separately).

All information pertaining to the set-up and installation of the boom systems is furnished with the accessory.

MANUAL BOOM CONTROL
(Part No. 895066)

1. Pressure Gauge
2. Manifold, Metered By-pass
3. Flynut and Elbow Assembly
4. Pressure Micrometer
5. Inlet Fitting 3/4” HB
6. Manual Boom Valve
7. Gauge Adapter Fitting 1/4” FPT
8. Hose Fitting 3/4” HB

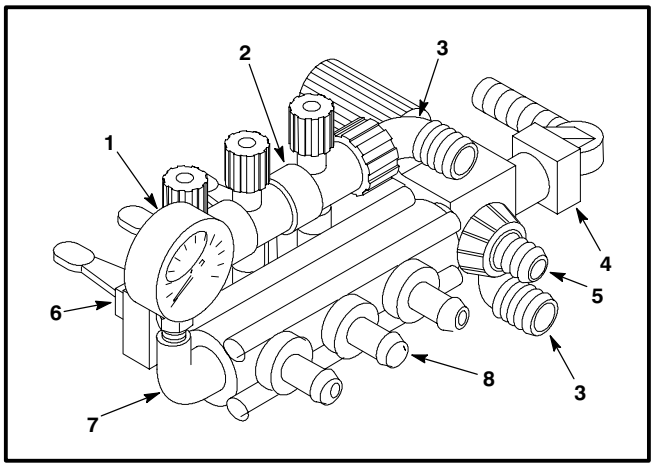


Figure 52
Manual Boom Control

ELECTRONIC MOTORIZED BOOM CONTROL
(Part No. 893293)

1. Pressure Gauge (Boom Pressure)
2. Pressure Adjust Switch (Up/Down)
3. Master Boom (Controls 1, 2 & 3)
4. Boom 1 (Left Boom)
5. Boom 2 (Center Boom)
6. Boom 3 (Right Boom)

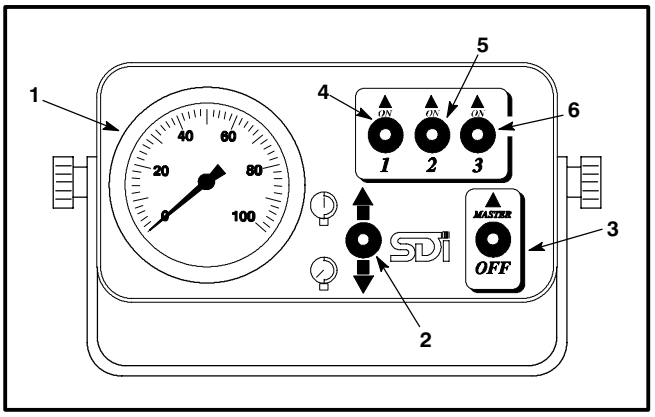


Figure 53
Electronic Motorized Boom Control

BOOM CONTROL W/MOTORIZED VALVES
(Raven SCS330, Part No. 895069)

1. Master Boom On/Off
2. Boom 1
3. Boom 2
4. Boom 3
5. System Select Power Switch
6. Rate Adjust/Over-ride Switch
   (Controls Pressure/Flow Servo Valve)
7. Rate/Data LCD Screen
   (Shows Flow Rate and Active Key Pad Function)
8. Data Input Keypad

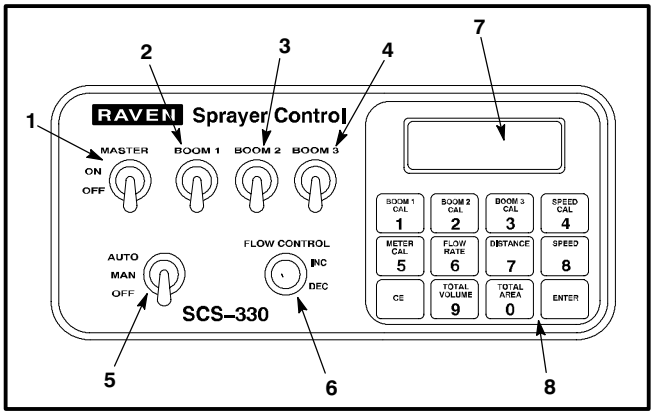


Figure 54
Raven SCS Boom Control

CONTROL VALVES

The control valves for determining which accessory to use are located on the left side of the vehicle directly behind the operators seat.

The agitator control handle (See Fig. 55) controls a six-jet nozzle assembly in the lower tank sump area. This handle controls the amount of liquid passing through the nozzles allowing complete agitation for mixing loaded chemicals with carrier (water). It is recommended to leave this valve fully open at all times even with low tank liquid level.

The hose reel and boom valve (See Fig. 55) allows isolated use of either the hose reel or the boom. The hose reel position allows hook-up to a hand-held spraygun or walking type spray boom. The boom position allows use of all spray boom accessories.

The boom control valve (See Fig. 56) needs to be open if the hose reel & boom selector valve is in the boom position, if the selector valve is in the hose reel position, this control valve needs to be in the closed position.

The suction valve (See Fig. 56) needs to be in the open position for normal operation. If the pump and/or the filter need servicing or repair, this valve can be turned to the closed position (with liquid in the tank) allowing these items to be worked on.

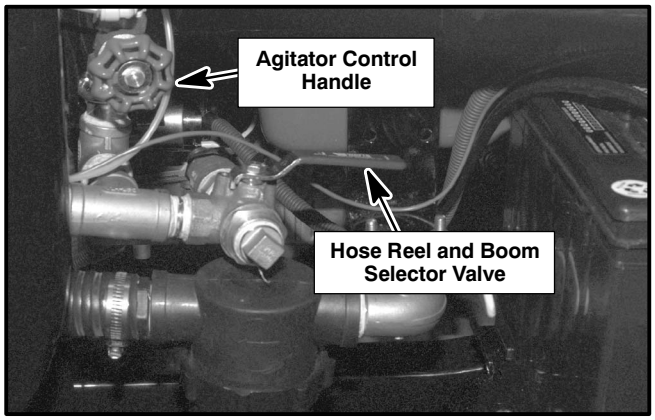


Figure 55
Agitator, Hose Reel & Boom Controls

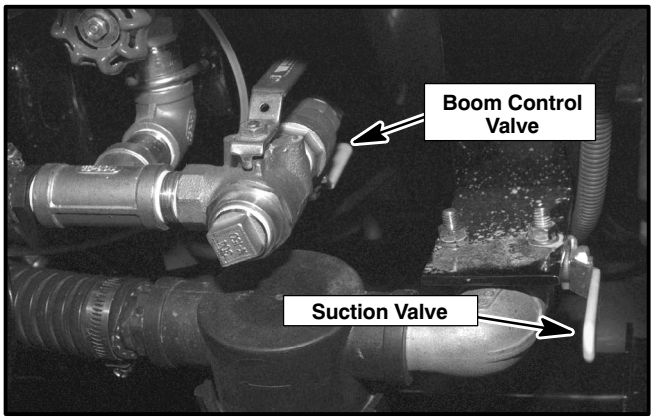


Figure 56
Boom and Suction Valves

SYSTEM DYNAMICS - HOW YOUR SYSTEM WORKS

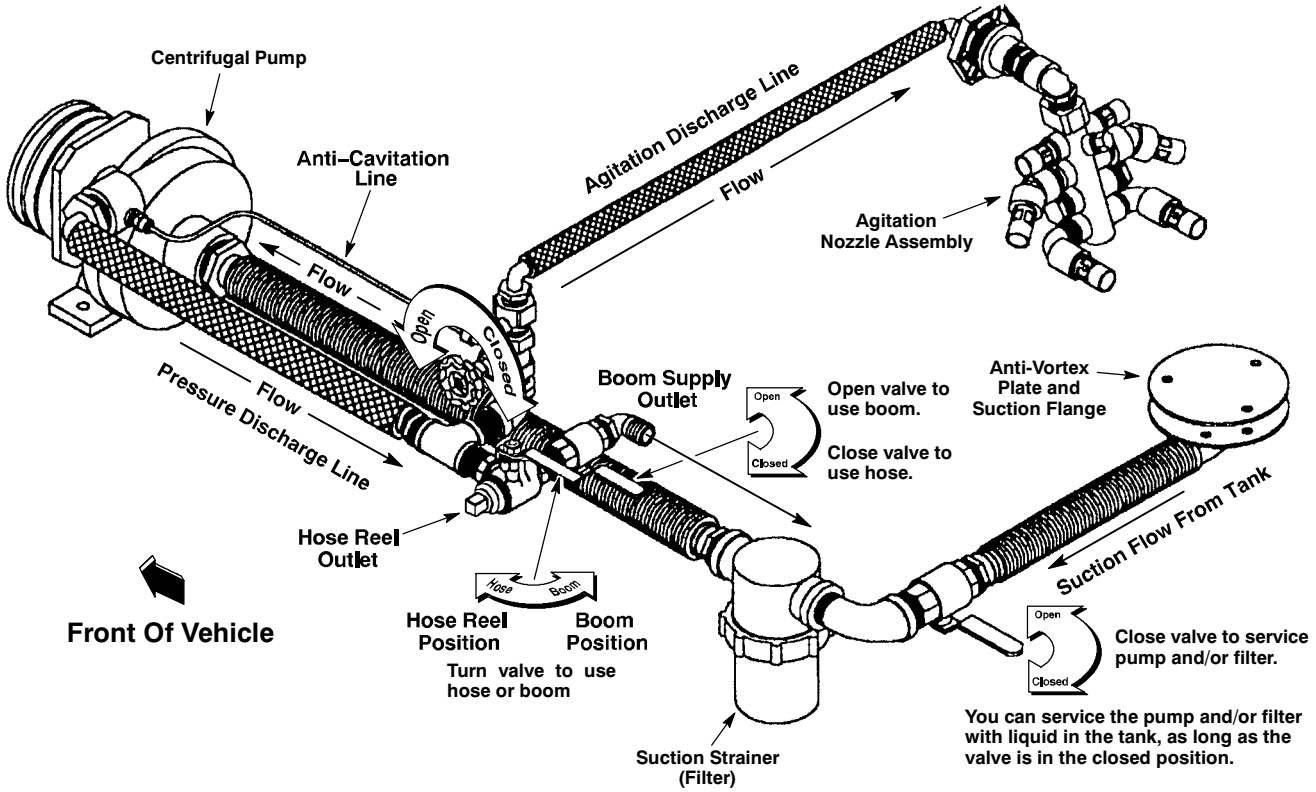
Power - Sprayer is powered by the engine on the Cushman Turf-Truckster and electrically supplied by the Turf-Trucks battery.

Transportation - The sprayer-to-truck mounting style makes the two systems act as one complete machine.

1. **Spray Tank** - containment for fluid and product mix chamber. Tank is constructed of fiberglass and resin compound with a 300 gallon (1135.5 L) capacity.
2. **Anti-Vortex Plate** - located in sump (lowest part of tank interior), facilitates complete liquid draining without causing pump cavitation (suction loss) or prime break. This plate attaches to the suction flange.
3. **Suction Flange** - external hose barb assembly on tank sump area, connects tank to main suction hose.
4. **Suction Ball Valve** - brass ball-valve which allows fluid to be shut off during suction screen cleaning or pump maintenance. Must be open during normal operating conditions.

System Dynamics - How Your System Works (con't.)

5. **Suction Strainer** - filters out particulate matter and debris from supply tank. Extends pump life and eliminates foreign objects which may disrupt normal boom or spray-gun operations.
6. **Centrifugal Pump** - the center of the impeller has an eye which allows liquid to pass through curved guide vanes to expel water in an outward direction (centrifugal force) towards the exit port on the pumps outer housing (volute).
7. **Agitation Control Gate Valve** - controls amount of tank agitation by amount of liquid passing through the Venturi nozzle multiplier orifice. It is recommended this valve remain fully open at all times, even if there is a low tank liquid level.
8. **Jet Agitation** - a six-head Venturi nozzle assembly in the lower sump area provides liquid agitation for mixing loaded chemicals with carrier (water).
9. **Hose Reel** - this accessory is a hose holding spool which allows hook-up of a hand-held spraygun or walking type spray boom. It holds supply/spray hose for repeated use while keeping hose and supplies organized.
10. **Boom (Boom Controls)** - supplies liquid to boom control valves (manual) or motorized valve assemblies for dispersal through the spray dispersal bar (boom).
11. **Boom Tubes** - SST pipe with nozzle bodies attached evenly distributes spray liquid to turf area (ground) with an over-lapping pattern. Nozzle bodies are diaphragm check (drip free) and supply liquid to the nozzle tips when liquid pressure exceeds 10 psi (69 kPa). When the boom shuts off the diaphragms keep the tips from dripping and also allows a quick air-free (hiss free) resumption of the spray pattern.



NOTES ON THE SYSTEMS DYNAMICS

WARNING

- ***DO NOT* run the system without circulating liquid present! Mechanical seals must be constantly lubricated with cool circulatory water (spray mix). Running the system dry will heat up the ceramic seat and the addition of a cool liquid to a hot/dry seal, will cause the ceramic to crack.**

Centrifugal Pump Lubrication - lubrication for the impeller inside the pump housing (volute) is your spray liquid. This liquid lubricates the mechanical seal (made of ceramic and graphite rings) that are around the impeller shaft. The pump rotation creates heat, so the liquid is also needed for cooling!

- The ***centrifugal pump*** is lubricated by the spray material therefore, the use of certain materials may affect maintenance or operation techniques.

Venturi-Jet Agitator Nozzles - installed with ceramic metered orifices (ceramic is a longer lasting material in comparison to plastic). Long lasting ceramic orifices provide stable agitation flow rates for trouble-free fluid mixing.

Suction Strainer - provides liquid filtering of particulate matter in spray material. Screen mesh sizes available are: 20, 50, 80 and 40 (standard) in SST material. The suction strainer (filter) should be cleaned daily or more often as the need arises. Remember to close the suction ball-valve (if liquid is in the tank) before removing the strainer.

Non-Corrosive Plumbing - all sprayer plumbing is SST, nylon or PVC, or polypropylene for all liquid handling parts.

AVOID HEAVY, THICK DYE MARKERS and add dyes into a full mixing tank, not an empty filling tank. See Trouble Shooting Section for Scrubbing Suggestions.

- ***Dyes*** - due to pigment granules and/or by-products, the use of dyes can lead to mechanical seal problems. Because of the high speed of the impeller seal and the heat that is generated, the pigments can scale upon the ceramic seal surface. This will cause the seals to leak (pump appears broken). Frequent rinsing between smaller tank loads (batches) can reduce the leakage at the seals. Also, using less dye than recommended, but enough to still see a color (marker) change, can result in better performance.
- ***Spray Liquid Viscosity*** - the addition of certain WP, WDG, EC's, etc. may cause the viscosity (thickness) of the water to increase. This can sometimes affect the calibration of the spray nozzle out-put at pre-calibration water numbers. Consult Chemical Supplier for recommended modifications to your system.

GETTING STARTED

***Practice* and *calibrate before* you spray dollars away! Know your machine and it's operation!**

Practice with water - after you have followed all recommendations, it is advisable to familiarize yourself with the operation of the dedicated sprayer and sprayer package. Practicing with plain water before the addition of expensive and destructive chemical formulas (when mis-applied), can be smart and cost effective.

To spray and spray accurately, you must have a set standards to spray by.

SDI SPRAYER OPERATION

CALIBRATION - First Step to Spraying

The following guidelines will assist you with calibration and application rates.

Desired Application Rate - GPA ***or*** G/1000 FT ^{2}

Nozzle Spacing - W" (distance between spray tips)

Desired Ground Speed - mph (a fixed, ground speed is recommended to maintain accurate calibration)

Tip Style - type of pattern for particle distribution of applicable chemical to be applied, i.e. (FL, XR, TT).

Tip Size - determines volume per minute, per nozzle and desired droplet (micron) size of spray carrier particles.

The easiest method of calibration is to use as many fixed constants that can be controlled, and then modify the tip size & out-put pressure to lock in your desired application rate.

When using the following formulas, the application rate can be maintained by fixing the constants for each category.

Useful Formulas and Conversion Factors

One Acre = 43,560 sq. ft.
= 43.56 1000 ft.^{2} blocks

One Acre = 0.405 hectares

One Hectare = 2.471 Acres

One Gallon Per Acre = 2.9 Fluid Ounces per 1000 ft.^{2}
= 9.35 Liters per Hectare

One Gallon Per 1000 ft.^{2} = 43.56 Gallons per Acre

One Gallon = 128 Fluid Ounces
= 8 Pints
= 4 Quarts
= 3.79 Liters
= 0.83 Imperial Gallons

One Mile = 5,280 Feet
= 1,610 Meters
= 1.61 Kilometers

One Pound per Square Inch = 0.069 bar
= 6.896 Kilopascal

$$\text{GPM (per nozzle)} = \frac{\text{GPA x mph x W}}{5{,}940}$$

$$\text{GPM (per nozzle)} = \frac{\text{GAL/1000 ft.}^2 \text{ x mph x W}}{136}$$

$$\text{GPA} = \frac{\text{5,940 x GPM (per nozzle)}}{\text{mph x W}}$$

$$\text{GAL/1000 ft.}^2 \text{ G/1000 ft.}^2 = \frac{\text{136 x GPM (per nozzle)}}{\text{mph x W}}$$

GPM - Gallons Per Minute

GPA - Gallons Per Acre

GAL/1000 ft^2 - Gallons Per 1000 Square Feet

mph - Miles Per Hour

W" - Nozzle Spacing (in inches)

A or **B** - Spray width (in inches) for single nozzle and boomless spraying

A - Nozzle volume required to obtain desired GPA rate at desired speed and spacings.

B - Nozzle volume required to obtain desired G/1000 ft.^{2} rate at desired speed and spacings.

MEASURING TRAVEL SPEED

The Cushman SprayTek offers four (4) forward speeds, plus a high-low differential range. This gives you the option of eight (8) possible speeds ***(spraying will be done in low range).***

The spray pump is designed to run at an engine speed of 3,000 to 3,600 rpm's. The ground control decal indicates the speed the vehicle should travel at different rpm settings.

It is recommended you establish ground speed based on the following information:

Measure Travel Speed (con't.)

Measure a test course in the area to be sprayed or in an area with similar surface conditions (terrain) of the area to be sprayed.

A minimum length of 100 ft. (30.5 M) to test speeds up to 5 mph (8 km/h) is recommended.

A minimum length of 200 ft (61 M) to test speeds from 5 mph (8 km/h) up to 10 mph (16 km/h) is recommended.

To help ensure accuracy, conduct the speed check with the sprayer tank half-full and select the throttle setting and forward gear that will be used when spraying.

Determine the time required to travel the test course and run the course a couple of times using the average time of both runs.

Use the following equation or the table shown to determine ground speed.

$$\text{Speed (mph)} = \frac{\text{Distance (ft.)} \times 60}{\text{Time (seconds)} \times 88}$$

Speed in MPH's miles per hour (km/h) (kilometers per hour)	Time Required In Seconds To Travel Distance Of		
	100 feet (30.5 meters)	200 feet (61 meters)	300 feet (91.4 meters)
0.5 mph (0.8 km/h)	136 seconds	272 seconds	409 seconds
1.0 mph (1.6 km/h)	68 seconds	136 seconds	205 seconds
1.5 mph (2.4 km/h)	46 seconds	92 seconds	136 seconds
2.0 mph (3.2 km/h)	34 seconds	68 seconds	103 seconds
2.5 mph (4.0 km/h)	27 seconds	54 seconds	82 seconds
3.0 mph (4.8 km/h)	23 seconds	46 seconds	68 seconds
3.5 mph (5.6 km/h)	20 seconds	40 seconds	58 seconds
4.0 mph (6.4 km/h)	17 seconds	34 seconds	52 seconds
4.5 mph (7.2 km/h)	15 seconds	30 seconds	46 seconds
5.0 mph (8.0 km/h)	13 seconds	28 seconds	41 seconds

The following chart will help in determining tip size, etc. when using the formulas mentioned on the previous page. The chart was taken from Page 14 of TeeJet Catalog 73. For a complete listing of tip options and charts, call SDI or your local dealer for a new TeeJet Catalog.

An example of using the chart and formula:

$$\text{(GPM/NOZZLE)} = \frac{\text{G/ 1000 ft.}^2\ (1) \times \text{mph (2.9)} \times \text{W" (10)}}{136} = .213$$

If we take the answer (.213) and look at the chart below, we see a yellow XR tip at 45 psi (310 kPa) will apply the proper amount based on Rate/Speed & Spacing constants used in the formula, ***also*** a blue XR tip at a 20 psi (138 kPa) would apply the proper amount as well.

Tip Color	Tip No. (Strainer Screen Size)		Liquid Pressure in psi	Capacity 1 Nozzle in GPM	Capacity 1 Nozzle in oz./min.	20" Nozzle Spacing							
						GALLONS PER ACRE				GALLONS PER 1000 Sq. Ft.			
	80° Series	110° Series				2 mph	3 mph	4 mph	5 mph	2 mph	3 mph	4 mph	5 mph
ORANGE	XR8001 (100 Mesh)	XR11001 (100 Mesh)	15	.06	8	8.9	5.9	4.5	3.6	.20	.14	.10	.08
			20	.07	9	10.4	6.9	5.2	4.2	.24	.16	.12	.10
			30	.09	12	13.4	8.9	6.7	5.3	.31	.20	.15	.12
			40	.10	13	14.9	9.9	7.4	5.9	.34	.23	.17	.14
			60	.12	15	17.8	11.9	8.9	7.1	.41	.27	.20	.16
GREEN	XR80015 (100 Mesh)	XR110015 (100 Mesh)	15	.09	12	13.4	8.9	6.7	5.3	.31	.20	.15	.12
			20	.11	14	16.3	10.9	8.2	6.5	.37	.25	.19	.15
			30	.13	17	19.3	12.9	9.7	7.7	.44	.29	.22	.18
			40	.15	19	22.0	14.9	11.1	8.9	.51	.34	.26	.20
			60	.18	23	27.0	17.8	13.4	10.7	.61	.41	.31	.24
YELLOW	XR8002 (50 Mesh)	XR11002 (50 Mesh)	15	.12	15	17.8	11.9	8.9	7.1	.41	.27	.20	.16
			20	.14	18	21.0	13.9	10.4	8.3	.48	.32	.24	.19
			30	.17	22	25.0	16.8	12.6	10.1	.58	.39	.29	.23
			40	.20	26	30.0	19.8	14.9	11.9	.68	.45	.34	.27
			60	.24	31	36.0	24.0	17.8	14.3	.82	.54	.41	.33
BLUE	XR8003 (50 Mesh)	XR11003 (50 Mesh)	15	.18	23	27.0	17.8	13.4	10.7	.61	.41	.31	.24
			20	.21	27	31.0	21.0	15.6	12.5	.71	.48	.36	.29
			30	.26	33	39.0	26.0	19.3	15.4	.88	.59	.44	.35
			40	.30	38	45.0	30.0	22.0	17.8	1.0	.68	.51	.41
			60	.37	47	55.0	37.0	27.0	22.0	1.3	.84	.63	.50
RED	XR8004 (50 Mesh)	XR11004 (50 Mesh)	15	.24	31	36.0	24.0	17.8	14.3	.82	.54	.41	.33
			20	.28	36	42.0	28.0	21.0	16.6	.95	.63	.48	.38
			30	.35	45	52.0	35.0	26.0	21.0	1.2	.79	.60	.48
			40	.40	51	59.0	40.0	30.0	24.0	1.4	.91	.68	.54
			60	.49	63	73.0	49.0	36.0	29.0	1.7	1.1	.83	.67

LOADING and MIXING PESTICIDES

How Much Pesticide Do I Add to My Spray Tank?

To determine the amount of pesticide to add to the spray tank, you need to know:

the recommended application rate of the pesticide, the capacity of the spray tank, and the calibrated output of the sprayer

The recommended application rate of the pesticide is given on the label. The rate is usually indicated as:

pounds per acre for wettable powders, and
pints, quarts, or gallons per acre for liquids.

Sometimes the recommendation is given as pounds of active ingredient (lb. a.i.) per acre rather than the amount of product per acre. The active ingredient must then be converted to actual product.

Dry Formulation:

Example 1. A carbaryl recommendation calls for 2 pounds of active ingredient (a.i.) per acre. You have purchased Sevin (80-percent wettable powder). Your sprayer has a 300 gallon tank and is calibrated to apply 20 gallons per acre. How much Sevin should be added to the spray tank?

Step 1. Determine the number of acres that you can spray with each tankful.

$$\frac{\text{Tank Capacity (gallons per tank)}}{\text{Spray Rate (gallons per acre)}} \quad \frac{300}{20} = 15 \text{ acres sprayed per tankful}$$

Step 2. Determine the pounds of pesticide product needed per acre. Because not all of the Sevin in the bag is an active ingredient, you will have to add more than two pounds of the product to each "acre's worth" of water in your tank. How much more?

The calculation is simple:

divide the percentage of active ingredient (80) into the total (100)

$$2 \text{ lb. a.i. per acre} \times \frac{100\%}{80\%} = 2.5 \text{ lb. of product per acre}$$

You will need 2.5 lbs. of product for each "acres worth" of water in the tank to apply 2 pounds of active ingredient per acre.

Step 3. Determine the amount of pesticide to add to each tankful. With each tankful you will cover 15 acres (Step 1), and you want 2.5 lbs. of product per acre (Step 2).
Take 15 acres x 2.5 lbs. per acre = 37.5 lbs.
You need to add 37.5 lbs. of Sevin to each tankful.

Example 2. The insecticide Diazinon recommendation calls for 4 lbs./acre. Your 5 gallon air-compression sprayer applies 1.25 gallons/1000 square feet. How many ounces should you add to the spray tank?

Step 1. Convert the recommended rate to oz./1000 square feet.

$$\text{oz./1000 sq. ft.} = \frac{\text{recommended lb./A x 1000 sq. ft.}}{2722^*} \quad \frac{= 4 \times 1000}{2722^*} \quad \frac{= 4,000}{2722^*} = 1.5 \text{ oz./1000 sq. ft.}$$

***** 2722 is a constant arrived at by dividing the number of square feet in 1 acre (43,560) by the number of ounces in a pound (16).

Step 2. Determine the amount of pesticide to add to each tankful.

$$\text{oz. pesticide/tankful} = \frac{\text{gal/tank x oz. pesticide/1000 sq. ft.}}{\text{gal. applied/1000 sq. ft.}} = \frac{5 \times 1.5}{1.25} = 6 \text{ oz./tankful}$$

Loading and Mixing Pesticides (con't.)

Liquid Formulation:

Example 1. A trichlorfon recommendation calls for 1 pound of active ingredient (a.i.) per acre. You have purchased Dylox 4E (4 pounds per gallon formulation). Your sprayer has a 300 gallon tank and is calibrated at 15 gallons per acre. How much Dylox should you add to the spray tank?

Step 1. Determine the number of acres that you can spray with each tankful. Your sprayer has a 300 gallon tank, and is calibrated for 15 gallons per acre.

$$\frac{\text{Tank Capacity (gallons per tank)}}{\text{Spray Rate (gallons per acre)}} \quad \frac{300}{15} = 20 \text{ acres sprayed per tankful}$$

Step 2. Determine the amount of product needed per acre by dividing the recommended a.i. per acre by the concentration of the formulation.

$$\frac{\text{1 lb. a.i. per acre}}{\text{4 lb. a.i. per gal.}} = \text{1/4 gal. per acre}$$

1/4 gallon (or 1 quart) of product is needed for each "acres worth" of water in the tank to apply 1 pound of active ingredient (a.i.) per acre.

Step 3. Determine the amount of pesticide to add to each tankful. With each tankful, you will cover 20 acres (Step 1), and you want 1/4 gallon (1 quart) of product per acre (Step 2). Add 20 quarts (20 acres x 1 quart per acre = 20) of trichlorgon to each tankful.

Example 2. The insecticide malathion recommendation calls for 1 gallon of product per acre. You have a 4 gallon knapsack sprayer that has been calibrated to apply 1/2 gallon per 1000 square feet. How many ounces should you add to the spray tank?

Step 1. Convert the recommended rate to pints/acre

$$\text{pints/acre} = \frac{\text{gal}}{\text{acre}} \times \frac{\text{4 pts.}}{\text{gal}} = 1 \times 4 = 4 \text{ pts./acre}$$

Step 2. Convert the required pints/acre to oz/1000 square feet.

$$\text{oz./1000 sq. ft.} = \frac{\text{recommended lb./A x 1000 sq. ft.}}{2722}$$

$$\frac{= 4 \times 1000}{2722} \quad \frac{= 4,000}{2722} = 1.5 \text{ oz./1000 sq. ft.}$$

Step 3. Determine the amount of pesticide to add to each tankful.

$$\text{oz./1000 sq. ft.} = \frac{\text{gal/tank x oz/1000 sq. ft.}}{\text{gal applied/1000 sq. ft.}}$$

$$\frac{= 4 \times 1.5}{.5} \quad \frac{= 6}{.5} = 12 \text{ oz./1000 sq. ft.}$$

Loading and Mixing Pesticides (con't.)

Adjuvants:

The manufacturer may recommend that you add a small amount of an adjuvant (spreader-sticker, surfactant, etc.) in addition to the regular chemical. This recommendation is often given as "percent concentration."

If you use an adjuvant at a 1/2% concentration by volume, how much should you add to a 300 gallon tank.

Solution 1. 1% of 100 gallons = 1 gallon (0.01 x 100 = 1)
1 1/2% of 100 gal. = 1/2 gal.
You will need 1/2 gal. per 100 gallons, or 1 1/2 gal. per 300 gallons (1/2 x 3 = 1 1/2)

Solution 2. 1 1/2% = 0.005
0.0005 x 300 gal. = 1.5 gal.

Loading and Mixing Notes

Mix times may vary by chemical, load size, water temperature and operator experience.

Normal mix time can be 20 to 30 minutes per tank. This allows enough time to provide complete particle distribution throughout the complete mixable liquid in the tank.

Just because the water is murky and clouded ***does not*** mean all the chemical is mixed.

WARNING

- **The mixing of non-compatible materials or formulations not previously tested by chemical professionals should be avoided. Volatile "brews" can be damaging and costly to repair and dispose of. Leave the burden of mix-up compatibility to the people who manufacture and sell the products to you.**
- **Mis-use of chemicals is not a warrantable offense if sprayer damage occurs.**

Spoon feed (add slowly), the chemicals to be applied to the agitating tank water. The addition of some products, all-at-once, may cause damage to the centrifugal pumps internal mechanical seals. Product labels (WP, EC, WDG, etc.), are abrasive in nature and should include extra mix time in the tank. Pre-packaged dissolvable bag types are also difficult to mix rapidly. The slow dissolve of the wrapper may lead to clogged suction strainers under certain "hasty" conditions. Liquid products can mix easier than most dry formulations, but can be difficult to mix in cold water areas. Consult with your chemical supply representative for any precautions or mixing suggestions for any unfamiliar products.

GIve it some time! Haste during the critical mixing phase, then spraying too soon, may cause severe damage to the turf because of rate changes from what your original rate was suppose to be.

Example: The first 1/3 of the tank could apply more than the desired rate when heavy products are not fully suspended in the carrier water. The second 1/3 of the tank could apply close to the correct rate while the final 1/3 of the tank would be light on active ingredients.

This is only a possible scenario, adequate mixing time is crucial and will eliminate these costly errors from happening.

At the completion of the chemical mixing phase (allowing proper time for particle distribution) you are now ready to apply the chemical mix to your fine turf.

PRE-START SYSTEMS CHECK

Spray Tank Check:

- Inspect frame for broken welds, cracks and make sure all mounting hardware is tight.
- Inspect spray tank for cracks and leaks.
- Inspect the lid and gasket for warpage and leaks, wipe off dirt from threads and gasket. Apply a light lubricant to gasket (such as silicone spray). Check lid center check-vent. Wipe any residue from ball and seat and check hinge pin.
- With open and basket removed, visually inspect the interior of the tank for flaking and residue build-up. Check anti-vortex plate (black circle in sump area) for debris, blocked suction can cause damage to the pump.
- Check Jet Agitator Venturi Nozzle position, aim as necessary.
- Periodically check the ceramic orifice cones in the Venturi nozzles,for cracks and blockage. These problems can lead to reduced agitation and possible mixing problems. Replace or clean as needed.

Pump and Power Check:

- Inspect hoses for cracks or any damage which could result in a leak.
- Check pump for seal leakage at rear weep holes around rear shaft bearing area.
- Check plastic vent tube from top of pump for kinks & dried powder products. Clean and/or repair as needed.
- Inspect and clean suction strainer (filter) screen.
- Inspect bowl and gasket. Improper gasket seating can result in poor pump performance, if necessary, replace with correct size gasket only! During bowl replacement, install bowl and tighten hand tight, ***Do Not*** use tools to tighten bowl!
- Between loads wipe bowl with rag to maintain clarity.
- Check to make sure suction ball-valve is open and free from damage.
- Make sure agitation valve is fully open (turn knob to the left, counter-clockwise, to open). Due to the unique design of the tank sump and anti-vortex area, turning the agitation down or off when the tanks liquid content is low is not necessary. The tank will pump down until dry with the agitation fully on.

Spray Boom Check:

- Inspect support frame and mounting hardware for loose or missing components. Repair as necessary.
- With vehicle tires properly inflated and tank full of water, make sure boom is level and adjusted to the proper height (see the instructions that came with the boom accessory for adjustments).
- Grease boom hinges (on breakaway booms) and remove any debris which may have accumulated on and around the pivot plate area (dirt affects the proper operation of the brakeaways).
- Adjust return spring tension for stiffer or looser action (see set-up manual with accessory). Check boom level again with booms in the lowered (operational) position.
- Inspect boom tube end-caps for cracks and leaks, repair as needed.
- Between sprays, check and clean all boom nozzle assemblies. Inspect check valve diaphragms for tears or warpage, check and clean tips with a soft nylon tip brush (***Do Not*** use hard/metal items - tip damage will occur!). Clean strainer screens and tip gaskets also. Replace worn or defective items as needed. Proper tip maintenance will result in optimum performance and pattern development.

Pre-start Systems Check (con't.)

Boom Control Check:

Manual Boom Controls:

- Inspect all black 3/4" rubber supply hoses for cracking, leaks and kinks. Repair as necessary.
- Make sure control valve mount hardware is tight.
- Check all screw clamps on the 3/4" hose for tightness and leakage. Tighten and/or replace any clamps which are loose or broke.

Motorized Boom Controls:

- Check battery connections. Check alligator clips for proper pole hook-up (+ / –).
- Make sure all wires connected to the clips and their fasteners are tight.

WARNING

- ***DO NOT* allow open flames or sparks near a battery when connecting for jump starting or while recharging the battery with a charger.**
- **Battery electrolyte is an acidic solution and should be handled with care. If electrolyte is spilled or splashed on any part of the body, immediately flush the exposed area with liberal amounts of water and obtain medical aid immediately.**

- Remove any corrosive build-up on the battery terminals. Use a mixture of baking soda & water and apply using an old toothbrush (or similar tool). Brush away the build-up being careful not to splash any of the residue on you or your clothing.
- Check control box mount and console wingnuts for tightness. Clean dirty console with a damp cloth (mild soap), ***Do Not*** use solvents to clean the console!
- Check all toggle switches for play and replace as needed. If switches are rubber booted, check boots for cracks or tears and replace as necessary.
- Check control console pressure gauge bezel (clear plastic ring which holds gauge into console). The raised tabs should be in the 6 and 12 o'clock positions.
- Check back side of console and make sure power & control cables are locked into the pin connectors. Replace the rubber boot if it shows signs of excessive wear or cracking.
- Check fuse and rubber boot.
- Check plastic pressure gauge tube for kinks, breaks or blockage, repair as needed.

  To clear a blocked tube (packed with dry powder)

  1. Put some clean water in the spray tank, 2 to 5 gallons (8 to 19 L) is sufficient.
  2. Turn sprayer on and set rpm's to 3000 on truck.
  3. On the back-side of the console is a metal tube receiver with an 1/8" tube engaged.
  4. Push the tube and top of the metal coupler in with your thumb and index finger, while holding the metal ring in, pull the tube out with your other hand. Point end of tube away from unit and your face and allow debris to clear from tube.
  5. If unsuccessful, remove other end of tube from Boom Valve inlet. Use a rubber tipped air nozzle to force high pressure air through the tube. If still unsuccessful, replace the tube with a new piece and start flushing the new tube after each spray application.

Motorized Boom Controls (con't))

- Move back to the boom area at the rear of the sprayer. Inspect the connector plugs on the motorized valve harness, they should be tight against the valve body tighten if necessary (there should be no prongs showing from the valve).
- Check valve mating joints (seams) for leakage. if a leak is detected, tighten the nuts on the 4 guide rod bolts (there are o-rings in each joint area, ***Do Not*** tighten too tight. If the leak persists, separate the valve bodies and replace the o-rings with new ones.
- Make sure the U-clips on the boom feed barbs and metered by-pass valve are pushed in and secured (leakage can result if U-clips are not in place).
- Follow the boom hoses from each motorized valve to the corresponding boom section, make sure the brass compression clamp (pipe saddle feeder) with the nylon fitting is snug against the SST tube and the pipe saddle is parallel to the ground (improper saddle alignment can cause reduced flow during large tip use, adjust as necessary).

Move to the control console, ***Listen*** carefully as you perform the next series of checks.

- Push up on the pressure-adjust toggle switch, the Servo motor on the yellow striped valve should run. Reverse toggle switch position, verify motor works in both directions.
- Push the master power toggle to the "ON" position, check the switches one-at-a-time for boom 1, then boom 2, then boom 3, checking switches in both directions. Verify each blue striped valve works in both directions.

Raven SCS330 Boom Controls:

- Procedures are similar to the motorized valve control, refer to the manual supplied with the Raven SCS330 Accessory for test procedures.
- Wipe any debris from the console using a damp rag and mild soap.
- Verify your pre-set calibration numbers, ***do they match your records sheet in the Raven Manual?*** Modify any numbers that do not match.
- Verify tip size in the boom is correct based on your desired spray speed, tip spacing, and target output.
- Make sure all harness connectors on the back of the box, at the flow meter and at the flow regulator servo valve are secure.
- Inspect drive-line speed sensor assembly, Remove any debris, especially metal shavings, from the red & black magnet assemblies on the drive-line (the metal particles can affect the pick-up sensors ability to read the signal, resulting with inaccurate speed readings and/or bad calibration settings by the computer).
- Place control box power switch to the "manual" position. Push the master power toggle to the "ON" position, check the switches one-at-a-time for boom 1, then boom 2, then boom 3, checking switches in both directions. Verify each blue striped valve works in both directions.
- If the Raven system is equipped with the RADAR speed sensor, refer to the Raven Manual for check-list and test procedures.

Accessory Check-list

The following check-lists refer to more accessories available for the sprayer. The set-up, operation and other related material is provided with each accessory.

Accessory Check-list (con't.)

Electric Boom Lift:

- For set-up and complete instructions refer to the manuals that come with the accessory.
- Check both actuator mounting bolts for tightness and for wing down position parallel to ground position, adjust according to set-up instructions.
- Check control harness fuse (30 amp rating).
- Check control console toggle switch for play and proper operation.
- Check harness connectors at control box and at each actuator.

Foam Marker:

- For set-up and complete instructions refer to the manuals that come with the accessory.
- Inspect solution tank for leaks and cracks.
- Check cap assembly for cracks and leaks.
- Check fuse in control harness (10 amp rating)

- **Be sure to use only SDI Foam Concentrate with the foam marker accessory. Use of other brands will cause adverse performance.**

- Activate power switch to the left then to the right positions and verify corresponding solenoid operation (you will hear a click) the compressor will start and if there is fluid in the container, liquid should flow to the feed tube on corresponding solenoid and foam generator cone junction tube.
- If solenoid clicks but foam liquid doesn't move through foam generator cone feed tubes, check each feed line check valve located just before each solenoid inlet. Clean as needed.
- Check supply fasteners on boom tubes for proper tightness and position. They should be positioned so they do not interfere with the tips or nozzle check valves. The loom (black ribbed cover) should run along the top of the boom tube and fastened with nylon cable ties.
- Check foam generator cone position. It should be at the end of the boom wing and clear the spray pattern distribution area. Keep cones out of spray by tilting up (required for rainbow style tips).

Hose Reel:

- For set-up and complete instructions refer to the manuals that come with the accessory.
- Check supply hose, from pressure side of pump to the swivel inlet on reel drum, for cracks, kinks or leaks.
- Lubricate the reel swivel at the grease zerk (if equipped).
- Check reel to tank hardware for tightness and evidence of leaks. Gasket sealer and fender washers should be used if not present (refer to the mounting instructions that come with the accessory).
- If electric rewind, check battery and harness connections (40 amp circuit breaker should also be used).

BOOM SPRAY-TIP OVERLAP CHECKS

To verify the boom is properly set-up and the tip and nozzle height is correct, a water only pass over a dry concrete or asphalt parking area can reveal much information about your systems set-up.

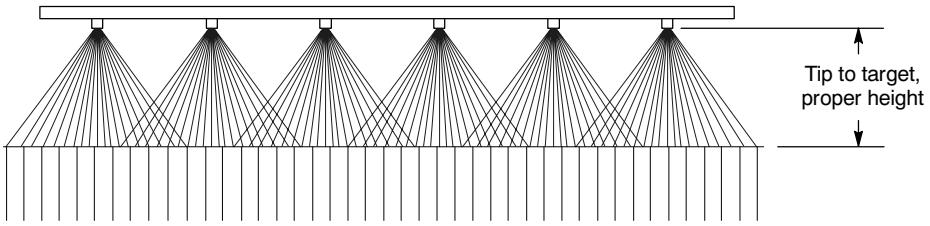
With only water in the tank, operate the machine as you normally would when spraying turf. With the spray boom fully on, apply a pattern to the dry surface. After the first pass, watch the spray dry and look for uneven areas or extra wet or extra dry zones.

Uniform and even drying indicates the system is applying a uniform pattern. Uneven drying or wet stripes can identify overlap problems (check each nozzle with a calibration catch container to acquire data for proper set-up of system.

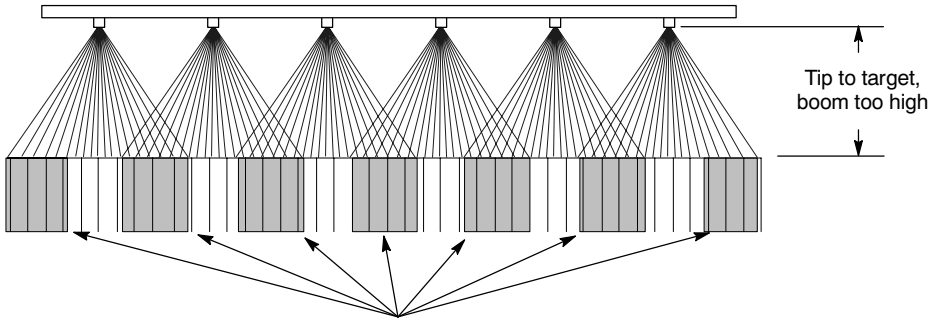
The illustrations below show examples of what to look for when adjusting boom height ***(proper tip height and overlap are found in the set-up instructions that come with the accessory).***

Example:

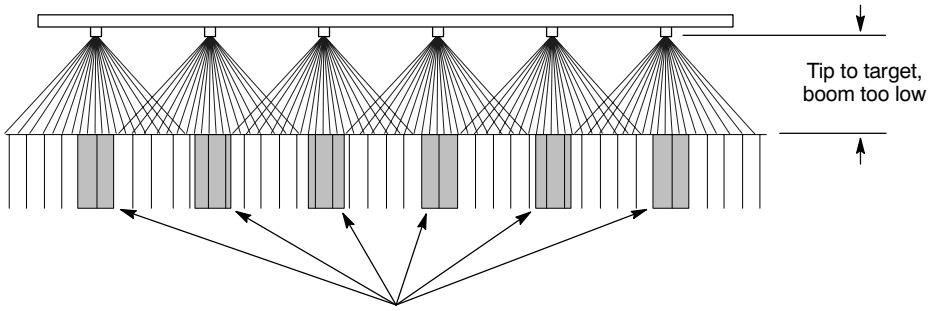
If the TeeJet tips are set for a 30% overlap on a 20” (508 mm) spacing, the proper tip to target height would be 18” (457.2 mm).



Tips set at correct height to achieve proper overlap will create an “even” spray pattern.



Wet stripes ***between*** nozzle tips can indicate the boom is too ***high.***



Stripes ***under*** nozzle tips can indicate the boom is too ***low.***

SYSTEM SPRAY ADJUSTMENT

Manual Control Pressure Adjustment:

Refer to the set-up and operation manuals provided with the accessory for more in-depth instructions of proper pressure adjustments.

Pressure adjust is done by using the pressure micrometer valve on the manual control.

With the truck governor set at 3000 rpm, the basic spray system will operate at approximately 70 PSI (483 kPa) with the jet agitators shut off. With the agitator valve wide open for maximum agitation, spray pressure will top out at 60 PSI (414 kPa).

First, adjust the agitation for proper mixing of the chemical,then open all boom valves and adjust the spray pressure using the manual or electric adjustment valve. If you are unable to set your spray pressure low enough, proceed as follows:

Set spray pressure as low as possible; partially close the ball valve that feeds the boom until spray pressure reads 5 PSI (34.5 kPa) below desired spray pressure. Reset spray pressure to desired setting.

Motorized Valve Control Pressure Adjustment:

Refer to the set-up and operation manuals provided with the accessory for more in-depth instructions for proper pressure adjustments.

Motorized valves can be adjusted by using the pressure adjust toggle switch which controls the motorized pressure regulator.

Raven SCS330 Control Pressure Adjustment:

Refer to the set-up and operation manuals provided with the accessory for more in-depth instructions for proper pressure adjustments.

Raven computer equipped sprayers can operate in the manual mode and follow the same guidelines as the standard motorized adjustment (no metered by-pass to adjust when the Raven system is used). Raven should be in the manual mode to adjust pressure on the system.

Note: The Raven System works on flow, not pressure. To view pressure, an optional gauge should be installed on the boom or on the tip assembly for pressure checks.

Pressure adjustment is important to obtain the proper nozzle output based on the standards given in the boom calibration formulas.

SYSTEM OPERATION

If your sprayer is equipped with SDI's "Quick" Foam Marking System, refer to the operation manual provided with the accessory.

Foamer use should be restricted to fairway and rough areas with longer turf grass heights. Using the foamer on greens and tee areas where the turf is shorter, can cause browning under slow dissipating foam balls during high air temperatures.

Be sure to allow enough spray overlap on the end nozzle to cover the foam ball with a dissipating spray. This technique allows for proper pattern overlap and the water from the spray speeds up the foam balls disappearing from the turf.

NOTICE

- Failure to hit the foam ball with the spray from the end of the nozzle, will result in an area not being treated with the spray.

System Operation (con't.)

The sprayer was designed to operate at an engine speed of 3000 to 3500 rpm's. This engine speed will provide full volume and pressure from the centrifugal pump system.

- Park Vehicle on level ground, turn off engine, place gear selector into neutral and apply the park brake.
- Remove the lid from the top of the spray tank by turning counter-clockwise (if unit is equipped with an anti-siphon device for back-flow protection, rotate and lock the goose neck filler into position).

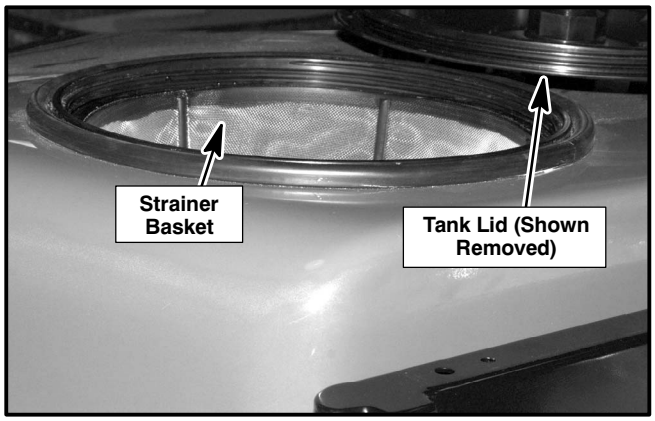


Figure 46
Tank Lid and Basket Strainer Location

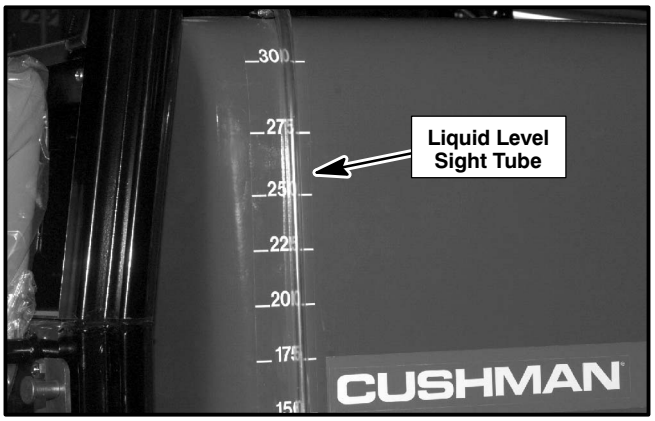


Figure 47
Liquid Level Sight Tube (Left Side of Tank)

- Keep the strainer basket in place, attach the feeder hose to the goose neck filler or place hose end into tank opening to begin filling. Slowly, turn the water source on gradually bringing it up to full stream (avoid splashing). The basket strainer should ***always*** be left in place when adding ***any*** material to the tank.
- Determine amount of spray mix to be used for your application. If the required amount is less than full tank capacity, fill to desired level. If the required amount is a **full load,** ***only fill tank*** to **3/4 full** (this will leave room for adding the chemicals which will be mixed, the balance of the fill water will be added later).
- If the pump suction strainer (filter) is not installed, do so at this time and open the suction gate-valve to the pump.
- Start the engine and using the governor hand control, set the engine rpm's to 3,000 rpm's.

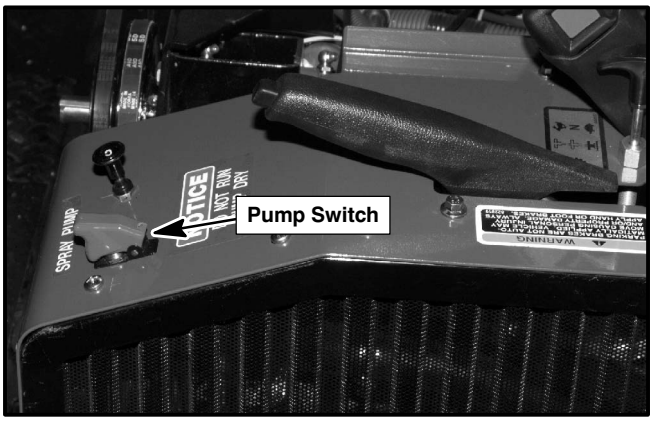


Figure 48
Pump Switch Location

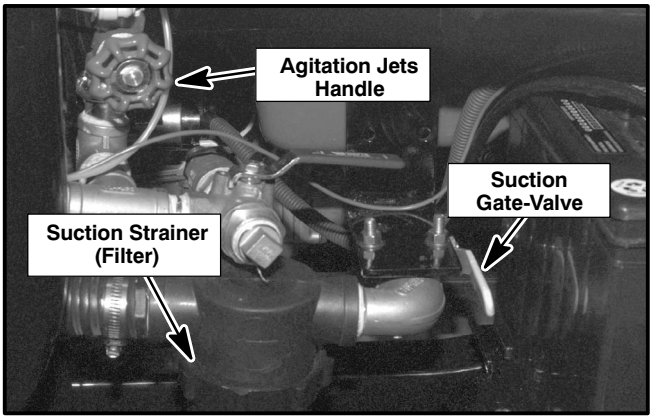


Figure 49
Suction Gate-Valve and Suction Strainer (Filter)

- Flip the pump switch to the "ON" position (See Figure 48). Look into the open lid (remove basket temporarily to look inside the tank). You should be able to see the water moving around from the force of the agitation jets etc. (the agitation handle should be in the fully open position).
  If there is no water movement from the jets or from the sump area, stop the engine and check the trouble-shooting guidelines for possible cures.
- Once the system is operational, a quick test should be performed before adding any product to the tank.

System Operation (con't.)

- Lower the boom wings to their operating position. Turn on the Master Boom Control and adjust pressure to 40 PSI (276 kPa) on the controller gauge.
- All nozzles should come on and develop a full pattern. Check boom, hoses and nozzles for leaks and faulty patterns. Repair and/or clean any items which may require attention.
- If all systems are operating properly, you may proceed to the loading and mixing area.

NOTICE

- System calibration and product active ingredient formula calibration should already be completed. If not, refer to the appropriate sections and compute your application data before continuing.

With calibration formulas completed, the correct tips in place, nozzle pressure set and a dry run calibration, you are ready to ***load and mix the product*** for your application.

Chemical Loading and Mixing

Please refer to Page 48 for procedures for proper loading and mixing of the chemicals.

CAUTION

- **Safety equipment should be used during all sprayer operations as a rule. Safety equipment should be in good to new condition, with no rips, holes or tears. Safety equipment you should consist of: spray suit, neoprene/PVC gloves, goggles/face shield and approved breathing device (respirator).**
- **Sprayer load and mix area should not be a high traffic area or visited by workers or other persons who are not properly protected with safety equipment.**

Make sure you have read and understand the operating procedures for the Turf-Truck *before* attempting to use the vehicle for chemical application.

If your vehicle is equipped with a speedometer, verify speed occasionally. The use of the ***ground speed governor control*** is highly recommended. This control will maintain your ground speed to keep your application rate on target (a constant speed is one of the necessary sprayer constants).

Frequently check your control pressure gauge for any changes from the original calibration settings. A rise in pressure could alert you to a clogged or partially blocked sprayer tip.

The Boom Wing Orientation option can assist you with keeping the boom level with the ground over uneven terrain (contact your dealer or SDI for more information).

During turn-arounds and while stopped, check the liquid level in the tank using the sight tube on the left side of the vehicle. You should never check the sight tube during forward movement, keep your eyes forward to avoid accidents.

If using a Raven Computer Controller, periodically check the Data/Rate screen for proper rate output. If it is not holding the desired rate consult the Raven User's Manual or contact your dealer, or the SDI factory.

System Operation (con't.)

When Refilling The Sprayer Tank:

- Check the fuel gauge, refill as needed.
- If using the foam marker accessory, check the solution tank and fill if necessary.
- If using wettable powders or equivalent, check suction strainer (filter) and nozzle tip strainers for possible debris build-up. Clean as needed. Avoid costly and messy "in-field" service of plugged nozzle screens by checking and cleaning them often.
- Refer to your calibration charts and area measurements to verify your application coverage is as planned. Make any necessary adjustments to obtain your correct rate. A 10% error in application can cost you hundreds to thousands of dollars in lost time and chemicals, not to mention the possibility of turf damage.

ADJUSTING BELT TIGHTNESS

Alternator Belt

To tighten and/or remove the **alternator belt,** loosen the hardware securing the alternator. Using a tire iron or similar device pivot the alternator until appropriate belt tension is achieved and tighten hardware (if removing the belt, pivot the alternator to allow enough slack for belt removal).

Tension should be set so there is a maximum of 1/4" (6.3 mm) to 1/2" (12.7 mm) amount of flex at the midway point of the longest span of the belt. ***Over-tensioning*** will result in shorter belt life.

Pump Belts

The jack-shaft and pump are located on the far-left side of the engine (in order to tighten or remove the pump and engine belts, the belt tensioning rod and spring will have to be loosened or removed).

The centrifugal pump is mounted on a hinged bracket allowing the pump to pivot in order to install, tighten or remove the pump belt.

To tighten the **pump belt,** remove the left-side engine cover screen, loosen the lock nuts on the belt tensioning rod to allow the adjustment nut to turn. Turn the adjusting nuts in the appropriate direction applying tension to the belt (ideal tension for the pump belt is the lowest amount of tension in which the belt will not slip under peak conditions). When desired tension is reached, lock the adjusting nut in place with the lock nut.

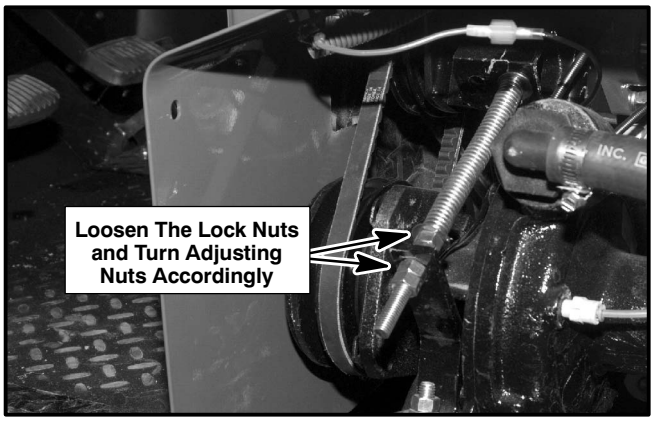


Figure 60
Tighten Pump Belt

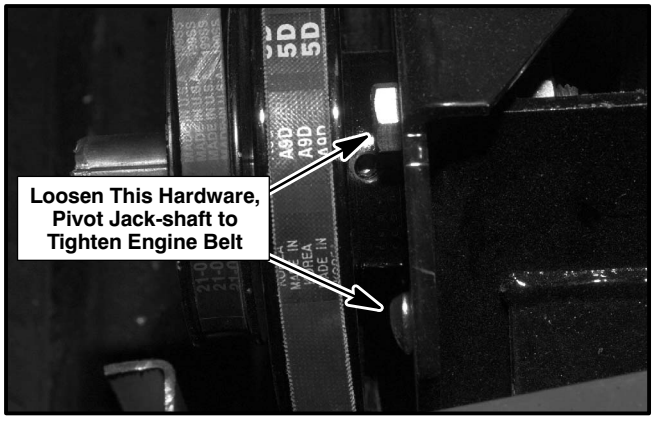


Figure 61
Tighten Engine Belt

To tighten the **engine/governor belt,** make sure the belt tensioning rod is loose. Loosen the two nuts on front of the jack-shaft bracket, use a tire iron or similar tool and pivot the jack-shaft assembly until the belt is tight (there should be a maximum of 1/4" (6.3 mm) to 1/2" (12.7 mm) amount of flex at the midway point at the longest span of the belt). When proper tension is reached, tighten the hardware. ***Over-tensioning*** will result in shorter belt life.

SPRAYER CLEAN-UP and EXTENDED STORAGE

Prior to storage, clean the sprayer thoroughly with a cleaning solution. Which solution to use will depend on the pesticides used during the season. Always check the pesticide label for specific cleaning instructions. During cleaning, always follow these general guidelines:

- Use a cleaning solution containing 2 pounds of detergent for each 30 to 40 gallons of water. This should be sufficient for removing most pesticides.
- First, flush the sprayer with clean water, then add the cleaning solution to the tank. Agitate thoroughly and allow the water-detergent solution to circulate through the system for several minutes.

NOTICE

- Some pesticide combinations (especially if oil is used) may produce a putty-type paste in the tank. Flushing out the residue of such chemicals after each load will help prevent accumulation.

- If water alone does not remove the build-up, add a solution equal to 1 gallon (3.8 L) of solvent per 25 gallons (94.6 L) of water (use Stoddard solvent, kerosene, or diesel fuel). Allow the paste to dissolve then agitate and flush.
- Remove the nozzles and flush the system twice with clean water. Clean nozzle tips and screens in a strong detergent solution or kerosene using a soft bristled toothbrush.
- When cleaning tanks which have carried some phenoxy herbicides such as 2,4-D, rinse the sprayer with clean water then rinse with one of the following, mixed with 25 gallons (94.6 L) of water:

  1 quart (.95 L) household ammonia

  1 pound (.45 k) of washing soda (sal soda)

  2 pounds (.91 k) of trisodium phosphate

  Circulate this solution and let a small amount flow through the nozzles. Keep the remainder of the solution in the system overnight and pump it out in the morning. Rinse and flush the system with clean water.

During the final cleaning, examine the hoses, clamps, connections, no-drip valves, nozzle tips and screens. replace as necessary.

Extended Storage (Winterizing)

After the final cleaning, follow these tips to get the most out of your sprayers life:

- Remove no-drip valves, nozzle tips and strainers and dry them thoroughly. Clean tips with a soft bristled toothbrush only. Store metal tips in a can of light oil such as kerosene or diesel fuel, store tips constructed of plastic and nylon in a dry place (make a special effort to store tips so that the orifices cannot be damaged by contacting other loose parts).
- Drain water from all parts to prevent freezing. To make sure all hoses are completely drained, purge them with compressed air.
- Place automotive anti-freeze with rust inhibitor in the pump and other spray parts, this will protect against corrosion as well as freezing if all water has not been drained.
- Tape or cover all openings such as nozzle openings, so dirt, insects or foreign material cannot get into the system.

Extended Storage (con't.)

- Check the sprayer for scratch spots etc., touch up these areas to prevent corrosion.
- Store sprayer in a clean dry location within a building. If storage in a building is not possible, provide some type of cover.
- Remove the hoses from the booms, wipe them clean and store them inside a building, ***do not*** hang them over a nail or similar object, this causes a permanent crease that reduces the flow through the hose. Coil the hoses around a basket or other large object to prevent sharp bends.

TROUBLE-SHOOTING

Your only problems that may arise with sprayer operation should be loss of pressure, not enough pressure, or a slight rise in pressure.

The following are suggestions of what to look for if these symptoms should occur. If a problem arises which you cannot repair, contact your dealer or the SDI factory for assistance.

Not Enough Pressure:

- Settings exceed pump capacity
- Spray tips too large
- Pump belt loose
- Suction strainer screen (filter) clogged
- Engine running too slow
- Tank empty
- Suction vacuum leak
- Liquid foaming in tank
- If centrifugal pump, air trapped in pump body or suction line

Loss of Pressure:

- Loss of engine speed (recommend governor control be used).
- Loss of a spray tip or excessive wear on the tips as compared to a non-current calibration check (frequent checks of system calibration results in better system performance.
- Clogged suction strainer (filter), clean as necessary.
- Tank empty (the system uses a gravity-fed centrifugal pump, if the suction screen becomes clogged it restricts the flow of water to the pump, under high liquid requirement applications the output could drop enough to cause loss of pressure).
- An improperly tightened strainer bowl (make sure the strainer bowl is properly tightened with the gasket in place, if not, a suction leak can occur resulting in loss of liquid to the pump).
- Loss of hydraulic fluid to the PTO. This is very rare and would require a significant amount of loss fluid to affect the PTO speed of the pump.

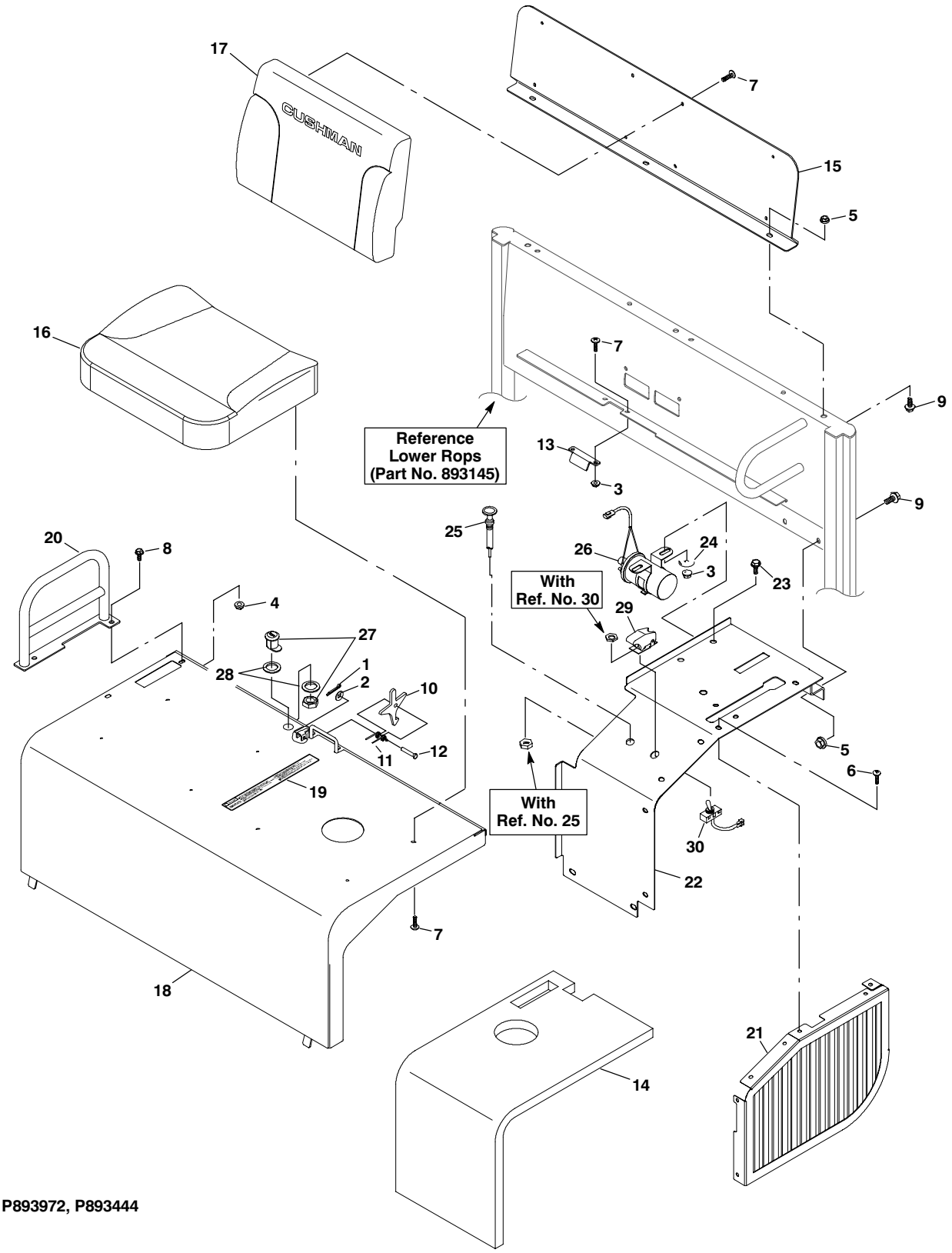
Rise in Pressure:

- Clogged or partially blocked spray tip orifice (routine nozzle screen cleaning and use of factory standard strainer screens will greatly reduce this from happening).
- Increase in engine speed (use the governor control to set constant speed).
- The use of SDI's motorized valves with metered by-pass can also affect system pressure if not properly adjusted. The metered by-pass affects the system pressure only when one or more sections are turned off. Loss or rise of pressure should not occur when all sections are operating at once because the meter by-pass option is non-operational when the valve is on (it only bleeds the system during valve shut down, off position).

To contact SDI (Spraying Devices, Inc.)

Phone: (559) SDI-5555 Fax: (559) SDI-5591

ENGINE COVER
SUZUKI 970 SPRAYTEK



P893972, P893444

ENGINE COVER
SUZUKI 970 SPRAYTEK

Ref. No.	Part No.	Description	No. Req'd
1	306328	Pin, cotter, .09 x .75	1
2	308090	Washer, 1/4	1
3	450452	Nut, M6-1.00 (G10.9)	4
4	450453	Nut, M8-1.25 (G10.9)	2
5	450454	Nut, M10-1.50 (G10.9)	5
6	800026	Screw, 1/4-20 x 3/4	7
7	450541	Screw, M6-1.00 x 16	18
8	452388	Screw, M8-1.25 x 20 (8.8)	2
9	452398	Screw, M10-1.50 x 20	5
10	523085	Bracket	1
11	816401	Spring, torsion	1
12	830784	Pin, clevis, .25 x 1.88	1
13	2702199	Catch, engine cover latch	1
14	841804	Insulation, engine cover	3
15	842030	Mount, backrest	1
16	893321	Seat, base assembly	1
17	893322	Backrest assembly	1
18	2700789	Cover, engine, w/decal	1
19	845038	•Decal, Operation	1
20	893541	Handhold (right side)	1
21	894232	Cover, left	1
22	2701210	Panel, console (sprayer)	1
23	800934	Screw, M6-1.00 x 16 (G10.9)	2
24	548175	Washer, 1/4 x 1 1/4 dia.	1
25	841813	Cable, choke (Suzuki 970)	1
26	33410-85010	Coil, ignition (Suzuki 970)	1
27 ◆	840436	Lock, handle	1
28 ◆	309488	Washer	2
29	72-121	Cover, switch	1
30	72-125	Switch, pump clutch	1

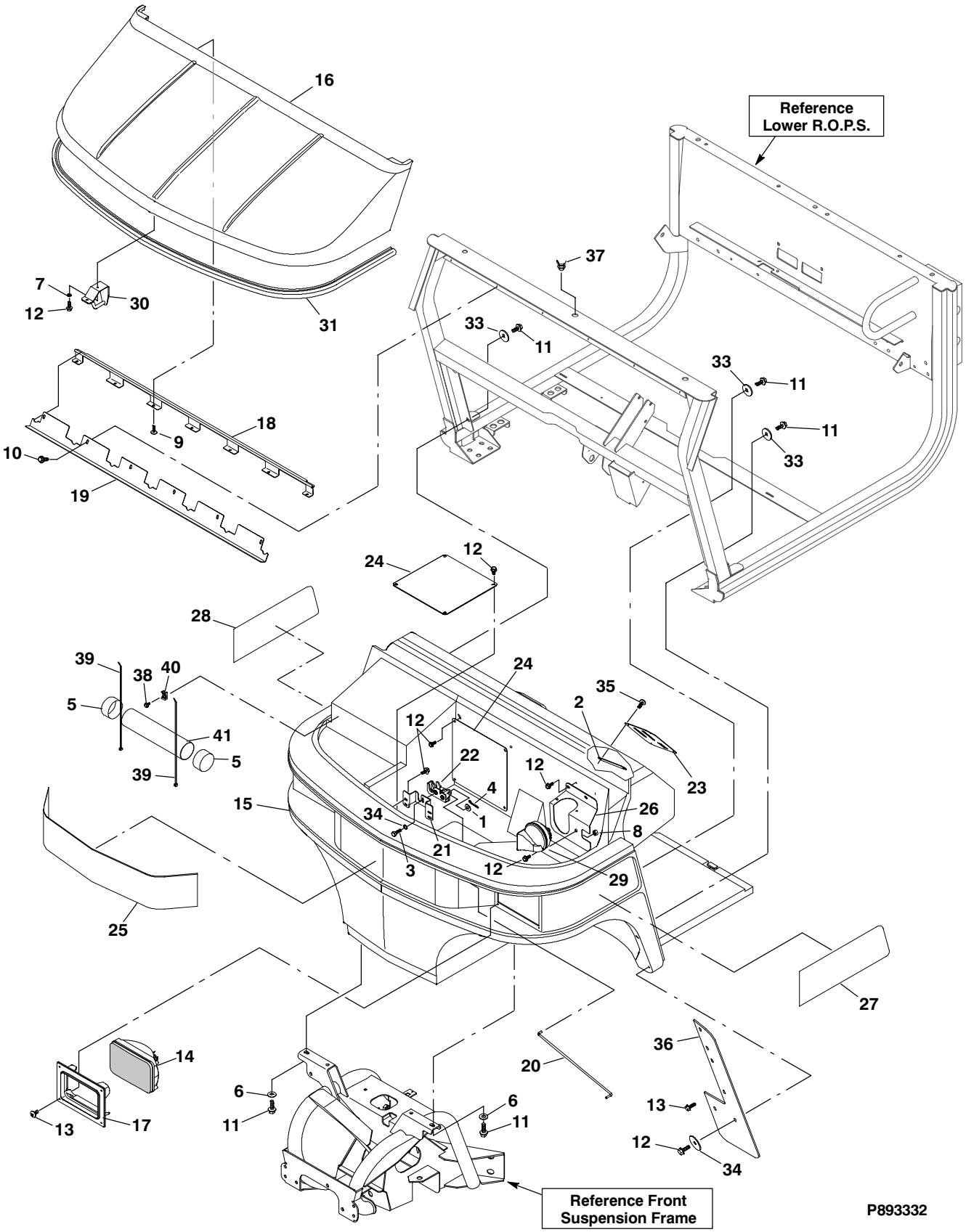
• INDENTED PARTS NAME INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

◆ Although Item No's. 27 & 28 (handle lock and washers) are used on EC Models, they may be obtained for use on any turf vehicles.

All SDI Sprayer parts can be obtained directly from SDI. Ref. No's. 29 & 30 are SDI parts.

Phone: (559) SDI-5555 **or Fax:** (559) SDI-5591

BODY, HOOD and HEADLIGHTS
SUZUKI 970 SPRAYTEK



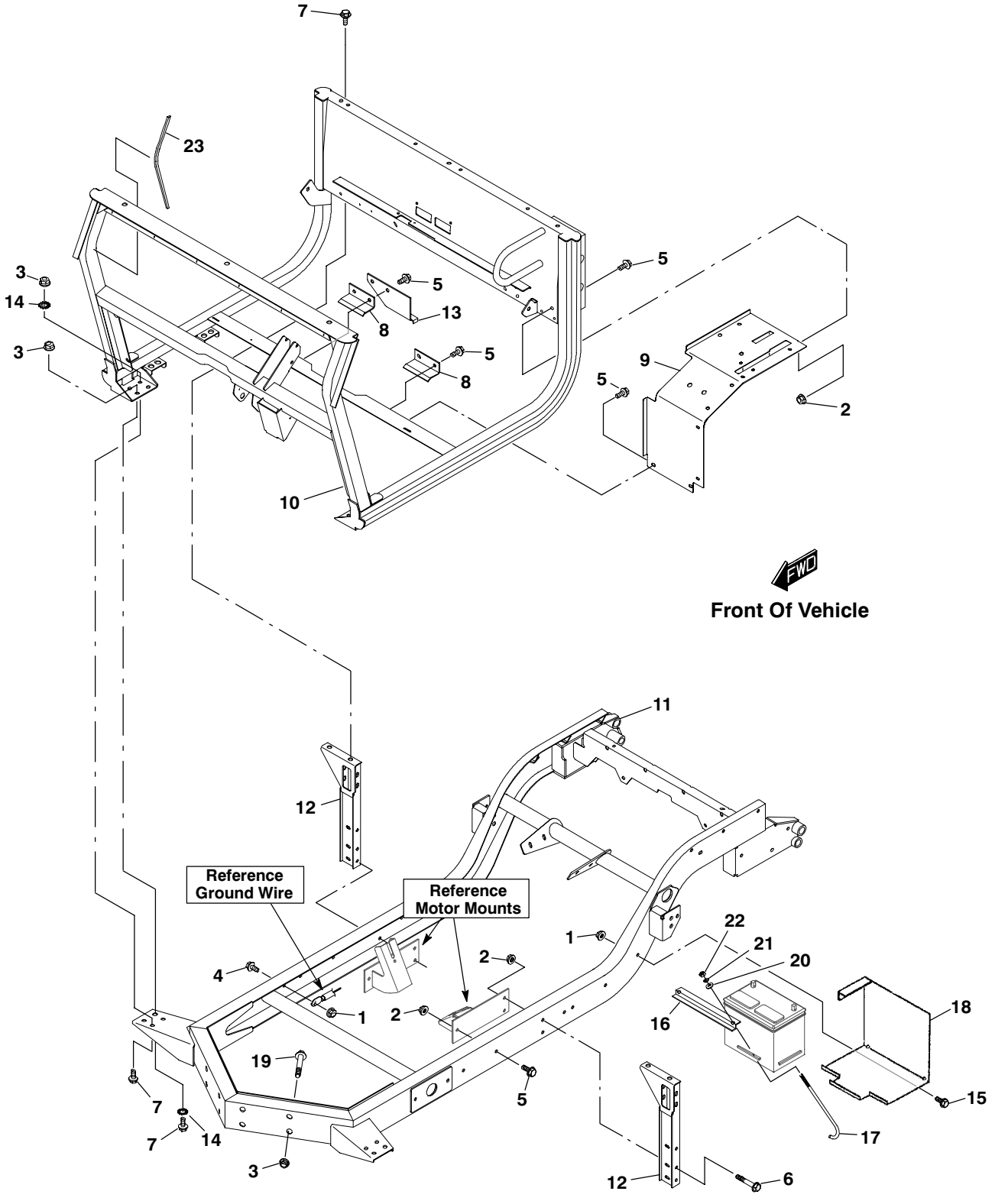
BODY, HOOD and HEADLIGHTS
SUZUKI 970 SPRAYTEK

Ref. No.	Part No.	Description	No. Req'd
1	303952	Washer, #10	1
2	894743	Nut ay., double 1/4-20	2
3	306419	Screw, 1/4-20 x 1/2	2
4	306463	Pin, cotter	1
5	38061A	Cap, vinyl	2
6	450400	Washer, M8	2
7	450410	Lockwasher, M6	2
8	450452	Nut, M6-1.00	1
9	450541	Screw, M6-1.00 x 16 (RPH)	7
10	452695	Screw, M6-1.00 x 20, taptite	6
11	800930	Screw, M8-1.25 x 16 (8.8)	6
12	800934	Screw, M6-1.00 x 16 (8.8)	25
13	800943	Screw, tap, #10-14	10
14	837303	Headlight, rectangular	2
15	841262	Clip, front	1
*	821071	•Decal, Notice not motor vehicle	1
*	840901	•Decal, Warning read ops. manual	1
16	73529G04	Hood, turf (green)	1
17	841428	Bezel, headlamp	2
18	841477	Hinge, hood	1
19	841637	Angle, front clip mount	1
20	841715	Rod, hood release	1
21	841753	Bracket, hood latch	1
22	2702198	Latch, hood	1
23	841264	Panel, dash (left)	1
*	844116	Decal, dash panel (left)	1
24	841913	Plate, access	2
25	74765	Decal, CUSHMAN	1
26	844167	Bracket, horn/brake reservoir	1
27	74797	Decal, Spraytek (left)	1
28	74795	Decal, Spraytek (right)	1
29	886425	Horn	1
30	894030	Striker, hood	1
31	844669	Seal, weather	As Req'd.
32	306488	Lockwasher, 1/4 shakeproof	2
33	548159	Washer, 5/16 (1 1/4" diameter)	4
34	548175	Washer, 1/4 (1 1/4" diameter)	8
35	800582	Screw, 1/4-20 x 3/4	4
36	844049	Flap, mud	2
37	844293	Plug	3
38	800344	Screw, tapping, #10 type AB	2
39	823549	Tie, cable, 15.5" (394 mm)	2
40	840508	Mount, cable tie	2
41	38541	Tube, document	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated.

FRAME
SUZUKI 970 SPRAYTEK



P894977, P894966

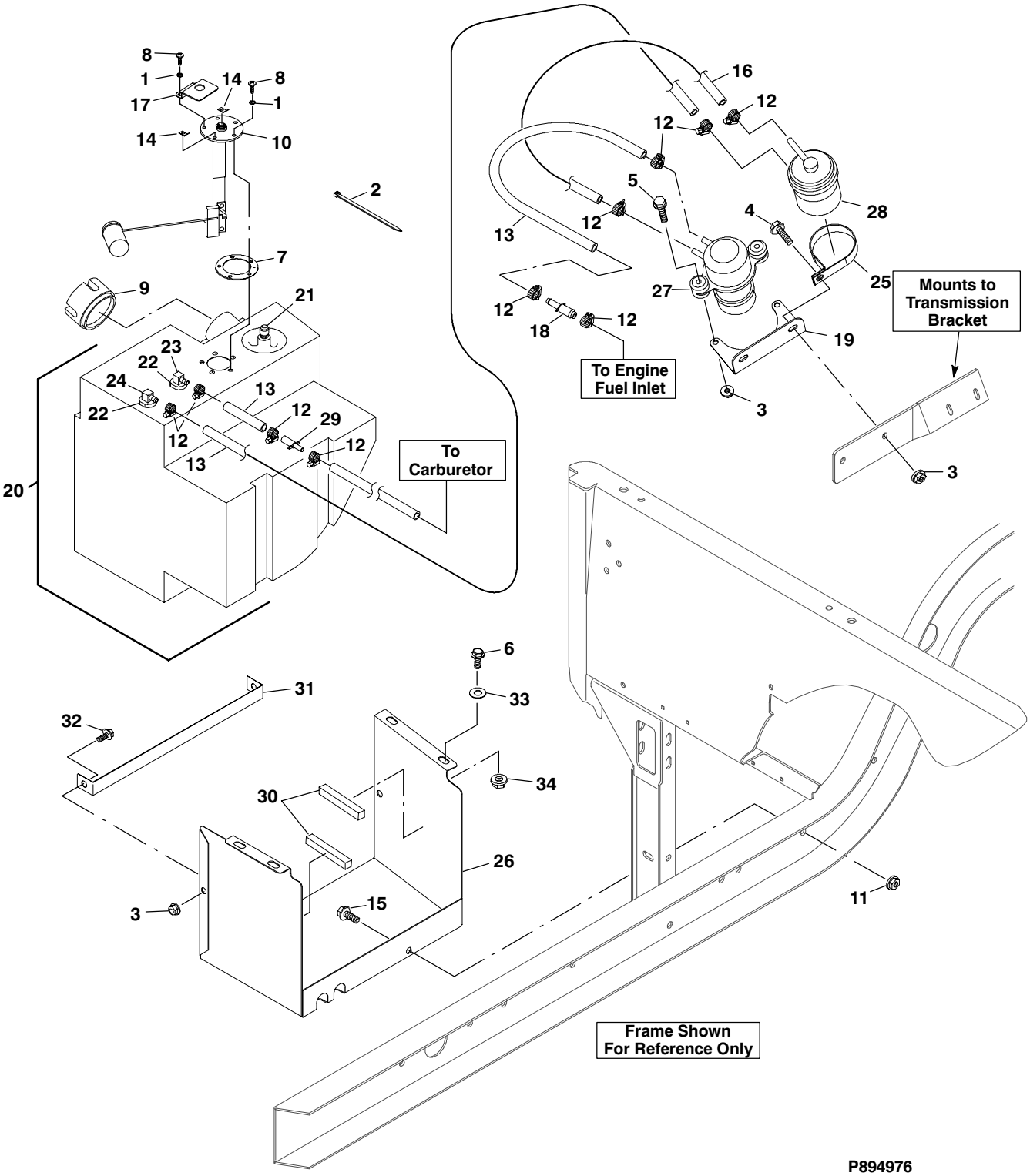
FRAME
SUZUKI 970 SPRAYTEK

Ref. No.	Part No.	Description	No. Req'd
1	450453	Nut, M8-1.25 (10.9)	4
2	450454	Nut, M10-1.50 (10.9)	19
3	450455	Nut, M12-1.75 (10.9)	16
4	452388	Screw, M8-1.25 x 20 (8.8)	1
5	452398	Screw, M10-1.50 x 20 (8.8)	14
6	452406	Screw, M10-1.50 x 90 (8.8)	4
7	452410	Screw, M12-1.75 x 30 (8.8)	12
8	842870	Angle, support	2
9	2701210	Panel, console (sprayer)	1
10	893145	ROPS, lower	1
11	893235	Frame, main (4-wheel)	1
12	893525	Support, platform	2
13	844647	Angle, hold-down	1
14	309067	Lockwasher, 1/2 shakeproof	2
15	452389	Screw, M8-1.25 x 25 (8.8)	3
16	11-544	Hold-down, battery	1
17	11-543	J-hook, battery	2
18	11-554	Box, battery	1
19	452415	Screw, M12-1.75 x 80 (8.8)	8
20	103867	Washer, 5/16	2
21	306325	Lockwasher, 5/16	2
22	306932	Nut, 5/16-18	2
23	828382	Seal, foam	As Req'd.

All SDI Sprayer parts can be obtained directly from SDI. Ref. No's. 16, 17 & 18 are SDI parts.

Phone: (559) SDI-5555 **or Fax:** (559) SDI-5591

FUEL SYSTEM
SUZUKI 970 SPRAYTEK



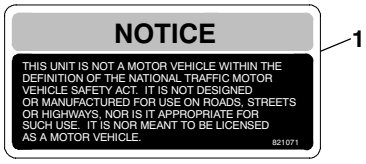
FUEL SYSTEM
SUZUKI 970 SPRAYTEK

Ref. No.	Part No.	Description	No. Req'd
1	120052	Lockwasher, #10	5
2	320107	Tie, cable, 7 1/2" (190.5 mm)	2
3	450452	Nut, M6-1.00 (G10.9)	6
4	452378	Screw, M6-1.00 x 20	2
5	452380	Screw, M6-1.00 x 30 (G8.8)	2
6	452398	Screw, M10-1.5 x 20 (8.8)	4
7	829954	Gasket	1
8	800021	Screw, #10-32 x 1/2	5
9	843343	Cap fuel (unvented)	1
10	843298	Sender, fuel	1
11	450453	Nut, M8-1.25 (10.9)	1
12	825624	Clamp, hose	10
13	7248	Hose, fuel, 5/16 i.d.	As Req'd.
14	829787	Terminal, 45° 1/4 male	2
15	452388	Screw, M8-1.25 x 20 (8.8)	1
16	7167	Hose, fuel, 1/4 i.d.	As Req'd.
17	833953	Cover, fuel sender	1
18	845189	Connector, hose	1
19	841769	Bracket, reservoir mounting	1
20	841969	Tank, fuel	1
21	836852	•Breather	1
22	84310	•Grommet	2
23	843727	•Elbow, 90°	1
24	843726	•Tube, fuel pick-up	1
25	842800	Clamp, filter	1
26	843078	Support, fuel tank	1
27	15100-53F03	Pump, fuel	1
28	15410-50F00	Filter, fuel	1
29	834037	Connector, hose	1
30▼	834005	Seal, foam	2
31	11-549	Strap, fuel tank	1
32	800934	Screw, M6-1.00 x 16 (8.8)	2
33	450391	Washer, M10	4
34	450454	Nut, M10-1.50 (10.9)	4

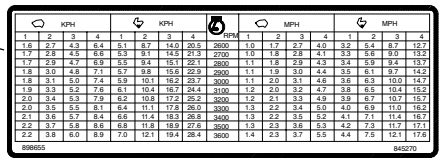
• INDENTED PARTS NAME INDICATE THESE PARTS ARE INCLUDED WITH THE PRECEDING ASSEMBLY

▼ Ref. No. 30 Foam Seal (Part No. 834005) is serviced as a 7" (178 mm) piece. Cut in half before applying to tank support

DECALS, SPRAYTEK MODELS


NOTICE
THIS UNIT IS NOT A MOTOR VEHICLE WITHIN THE DEFINITION OF THE NATIONAL TRAFFIC MOTOR VEHICLE SAFETY ACT. IT IS NOT DESIGNED OR MANUFACTURED FOR USE ON ROADS, STREETS OR HIGHWAYS, NOR IS IT APPROPRIATE FOR SUCH USE. IT IS NOR MEANT TO BE LICENSED AS A MOTOR VEHICLE.
821071
1

12



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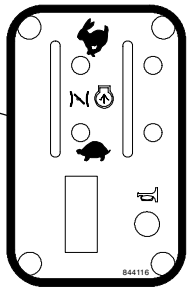

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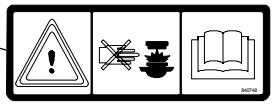

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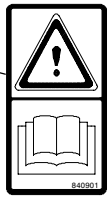
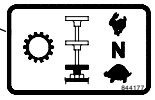


4



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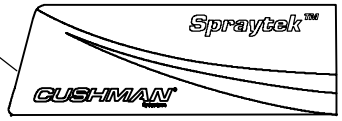
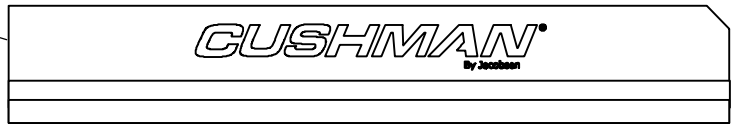


7

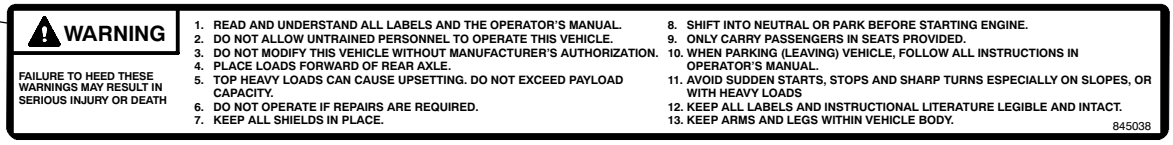
8

WARNING
PARKING BRAKES ARE NOT AUTO-MATICALLY APPLIED. VEHICLE MAY MOVE CAUSING PERSONAL INJURY AND/OR PROPERTY DAMAGE. ALWAYS APPLY HAND OR FOOT BRAKES.
822819
2

9

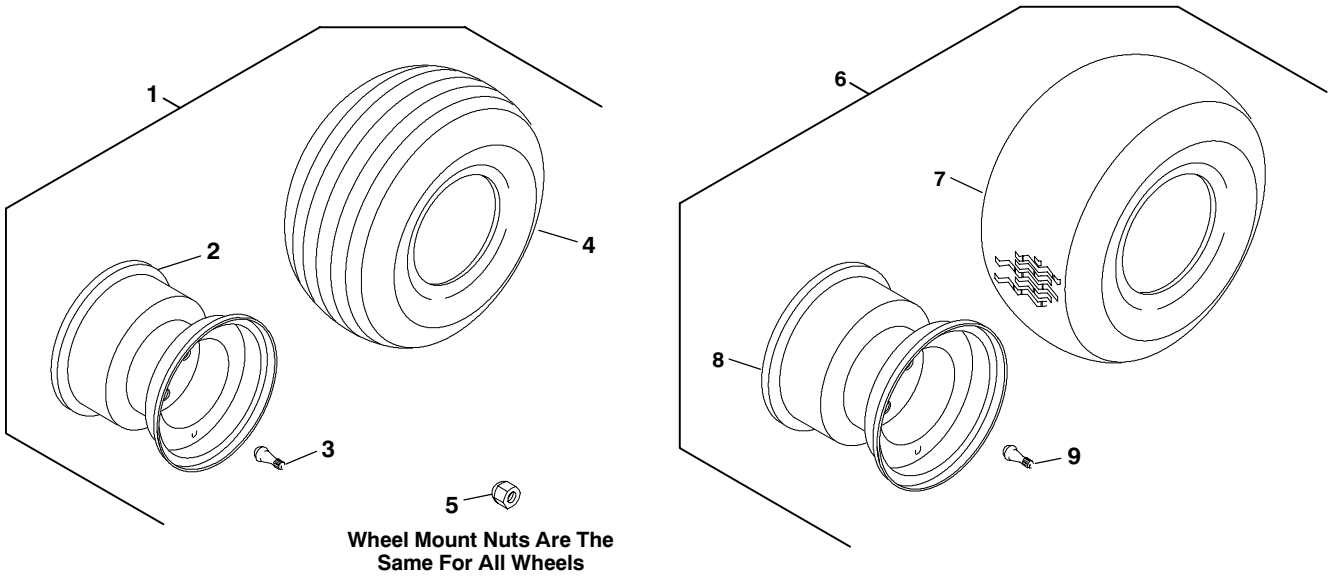


11


WARNING
FAILURE TO HEED THESE WARNINGS MAY RESULT IN SERIOUS INJURY OR DEATH
1. READ AND UNDERSTAND ALL LABELS AND THE OPERATOR'S MANUAL.
2. DO NOT ALLOW UNTRAINED PERSONNEL TO OPERATE THIS VEHICLE.
3. DO NOT MODIFY THIS VEHICLE WITHOUT MANUFACTURER'S AUTHORIZATION.
4. PLACE LOADS FORWARD OF REAR AXLE.
5. TOP HEAVY LOADS CAN CAUSE UPSETTING. DO NOT EXCEED PAYLOAD CAPACITY.
6. DO NOT OPERATE IF REPAIRS ARE REQUIRED.
7. KEEP ALL SHIELDS IN PLACE.
8. SHIFT INTO NEUTRAL OR PARK BEFORE STARTING ENGINE.
9. ONLY CARRY PASSENGERS IN SEATS PROVIDED.
10. WHEN PARKING (LEAVING) VEHICLE, FOLLOW ALL INSTRUCTIONS IN OPERATOR'S MANUAL.
11. AVOID SUDDEN STARTS, STOPS AND SHARP TURNS ESPECIALLY ON SLOPES, OR WITH HEAVY LOADS
12. KEEP ALL LABELS AND INSTRUCTIONAL LITERATURE LEGIBLE AND INTACT.
13. KEEP ARMS AND LEGS WITHIN VEHICLE BODY.
845038

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	821071	Decal, Notice not motor vehicle	1	7	74795	Decal, Spraytek (RH)	1
2	822819	Decal, Warning, park brake	1	8	74797	Decal, Spraytek (LH)	1
3	840754	Decal, Warning, pressure	1	9	74765	Decal, Cushman-Jacobsen	1
4	840901	Decal, Warning, read ops. man.	1	10	009034880	Decal, Warning, fan	1
5	844116	Decal, LH dash, turf	1	11	845038	Decal, Vehicle Operation	1
6	844177	Decal, aux. transmission	1	12	845270	Decal, ground speed, sprayer	1

FRONT & REAR TIRES and WHEEL ASSEMBLY
SDI SPRAYER



P894262

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	894763	Tire and wheel (front) 4-wheel	2	6	2701174	Tire and wheel (rear)	2
2	841433	•Wheel, 10.00 x 7.50, five bolt	1	7	2218140-01	•Tire, 6 ply	1
3	886735	•Stem, valve	1	8	841434	•Wheel, 12.00 x 10.50	1
4	◊◊	•Tire, 20 x 10.00 - 10, multi-rib	1	9	886735	•Stem, valve	1
5	800909	Nut, wheel mount	20				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN PRECEDING ASSEMBLY
◊◊ Obtain locally

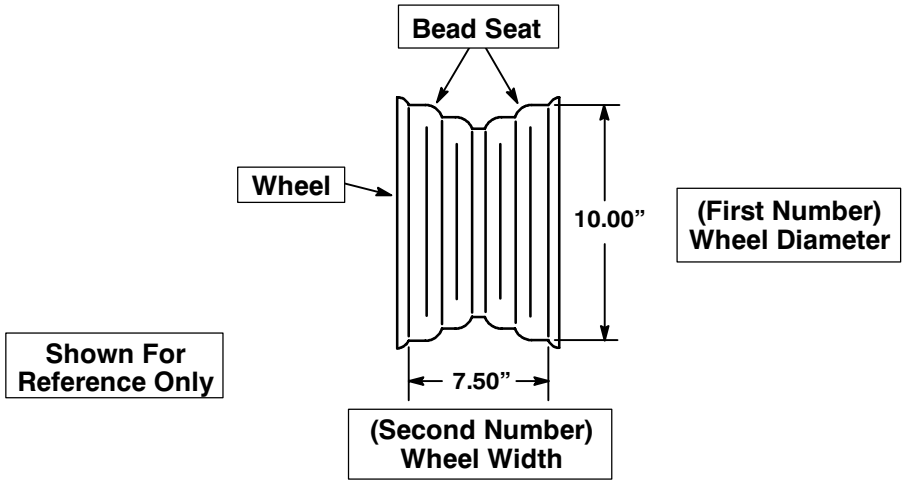
WHEEL SIZE MEASUREMENT

Wheel size is determined by measuring the wheel at the bead seat.

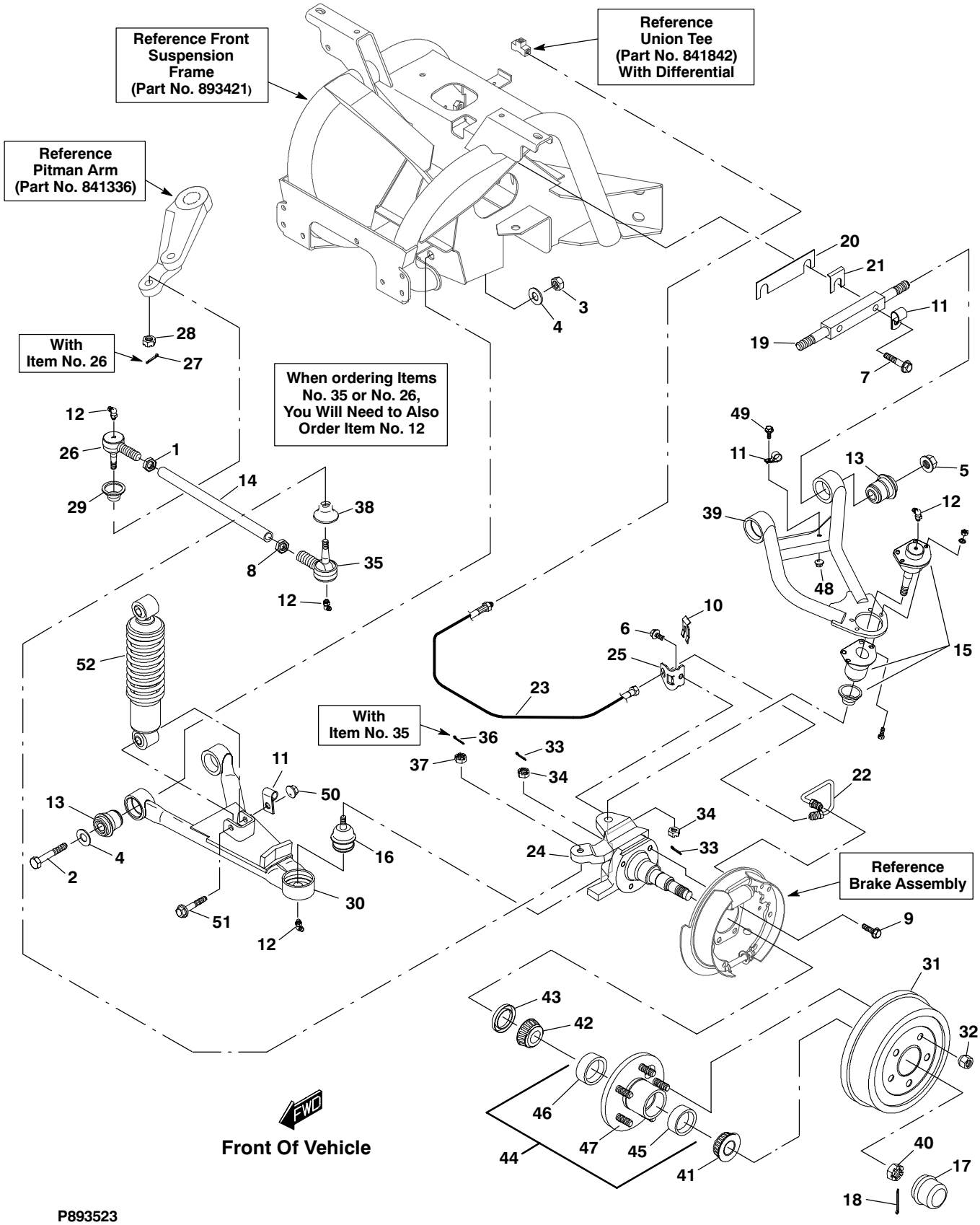
The ***first number*** is the ***wheel diameter*** measured at the bead seat.

The ***second number*** is the ***wheel width*** measured at the bead seat.

The illustration below shows an ***example*** of how to measure the wheel to determine tire size.



FRONT SUSPENSION (LEFT SIDE) and TIE RODS
SUZUKI 970 SPRAYTEK


Reference Front Suspension Frame (Part No. 893421)
Reference Union Tee (Part No. 841842) With Differential
Reference Pitman Arm (Part No. 841336)
With Item No. 26
When ordering Items No. 35 or No. 26, You Will Need to Also Order Item No. 12
With Item No. 35
Reference Brake Assembly
FWD
Front Of Vehicle
P893523

FRONT SUSPENSION (LEFT SIDE) and TIE RODS
SUZUKI 970 SPRAYTEK

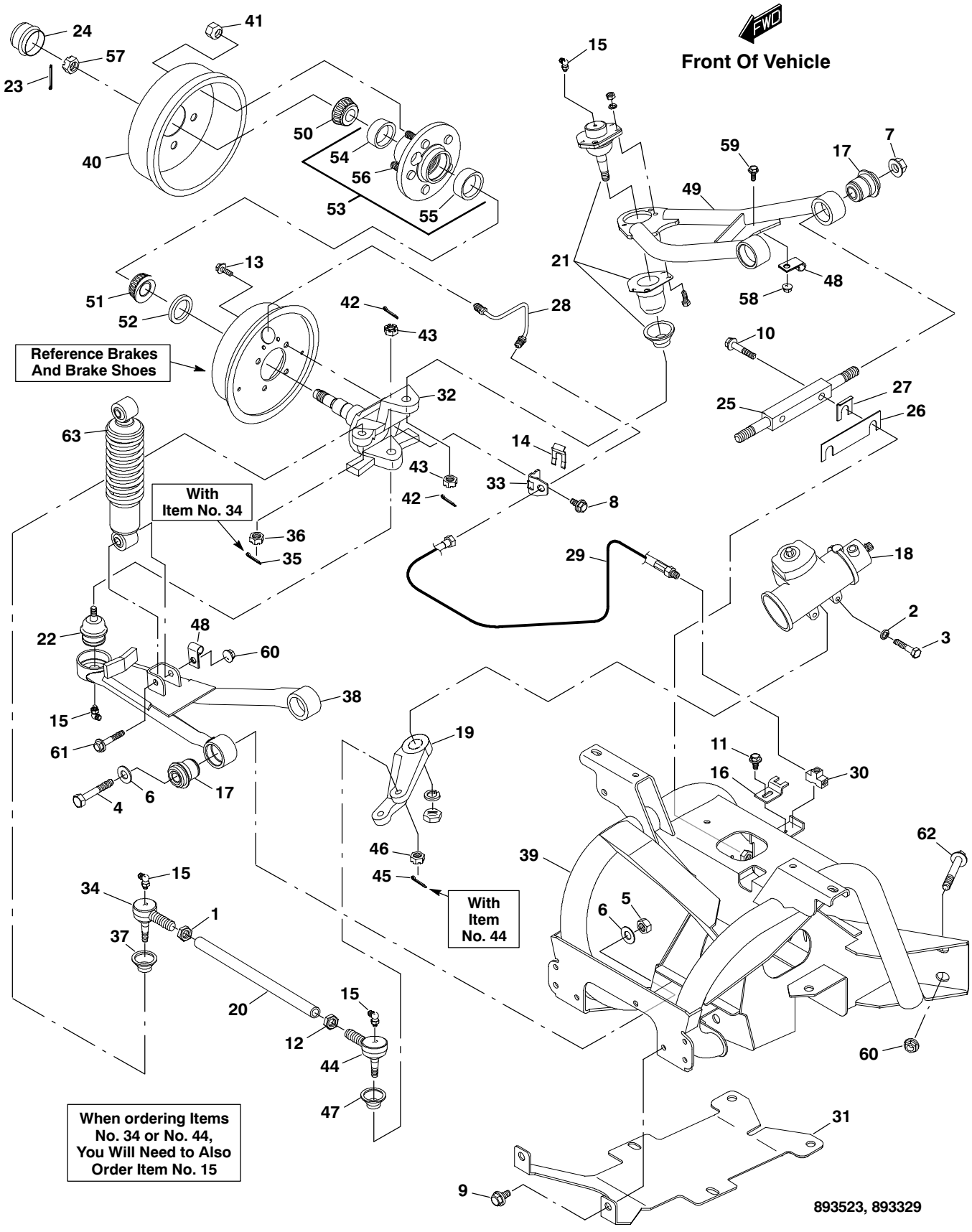
Ref. No.	Part No.	Description	No. Req'd
1	302944	Nut, jam, 9/16-18	1
2	450077	Bolt, M16-2.00 x 90	2
3	450382	Nut, M16-2.00, locking insert	2
4	450393	Washer, M16	4
5	450457	Nut, M16-2.00, flange (G10.9)	2
6	452398	Screw, M10-1.5 x 20 (8.8)	1
7	800945	Bolt, M12-1.75 x 60 (G10.9)	2
8	800485	Nut, 9/16-18, left-hand	1
9	800919	Bolt, M10-1.5 x 30 (G10.9)	4
10	809137	Clip	1
11	810437	Clamp	4
12	831405	Fitting, grease, 1/4-28 (90°)	4
13	841167	Bushing, silentbloc	4
14	841404	Rod, tie	1
15	844148	Ball joint, upper	1
16	841429	Ball joint, lower	1
17	817250	Cap, grease	1
18	304636	Pin, cotter 1/8 x 1 1/8"	1
19	841630	Trunnion, control arm	1
20	841737	Shim, .060"	4
21	841738	Shim, .024"	2
22	841840	Tube, brake (left)	1
23	841841	Hose, brake	1
24	894573	Knuckle, steering (left)	1
25	842104	Bracket, brake tube	1
26	887512	End, tie rod (RH thread)	1
27	306328	•Pin, cotter, 3/32 x 3/4	1
*	548224	•Fitting, lubrication	1
28	311537	Nut, castle 3/4-16	1
29	816586	Retainer, grease	1
30	893233	Arm assembly, lower control	1
31	841430	Drum, brake	1
32	800909	Nut, wheel retaining, M12-1.50	5
33	306328	Pin, cotter, 3/32 x 3/4	2
34	306825	Nut, castle, 7/16-20	2
35	887750	End, tie rod (LH thread)	1
36	306328	•Pin, cotter, 3/32 x 3/4	1
*	548224	•Fitting, lubrication	1
37	311537	Nut, castle 3/4-16	1
38	816586	Retainer, grease	1
39	893266	Arm assembly, upper control	1
40	311537	Nut, castle 3/4-16	1
41	385174	Bearing, cone (outer)	1
42	815403	Bearing, cone (inner)	1
43	817928	Seal, grease	1
44	893206	Hub assembly	1
45	808088	•Cup, bearing (outer)	1
46	814474	•Cup, bearing (inner)	1
47	800908	•Screw, lug M12-1.50 x 42	5
48	450452	Nut, M6-1.00 (G10.9)	1
49	452378	Screw, M6-1.00 x 20 (G10.9)	1
50	450455	Nut, M12-1.75 (G10.9)	4
51	452413	Screw, M12-1.75 x 60	4
52	894635	Strut ay, (shock & spring)	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated. Although this lubrication fitting is the standard fitting used with this tie rod, it is **not** used in this application. Use Ref. No. 12, Part No. 831405.

If ordering Ref. No's. 26 (887512) or 35 (887750) you will also need to order Ref. No. 12 (831405).

FRONT SUSPENSION (RIGHT SIDE), TIE RODS and SKID PLATE
SUZUKI SPRAYTEK


FWD
Front Of Vehicle
Reference Brakes And Brake Shoes
With Item No. 34
With Item No. 44
When ordering Items No. 34 or No. 44, You Will Need to Also Order Item No. 15
893523, 893329

FRONT SUSPENSION (RIGHT SIDE), TIE RODS and SKID PLATE
SUZUKI SPRAYTEK

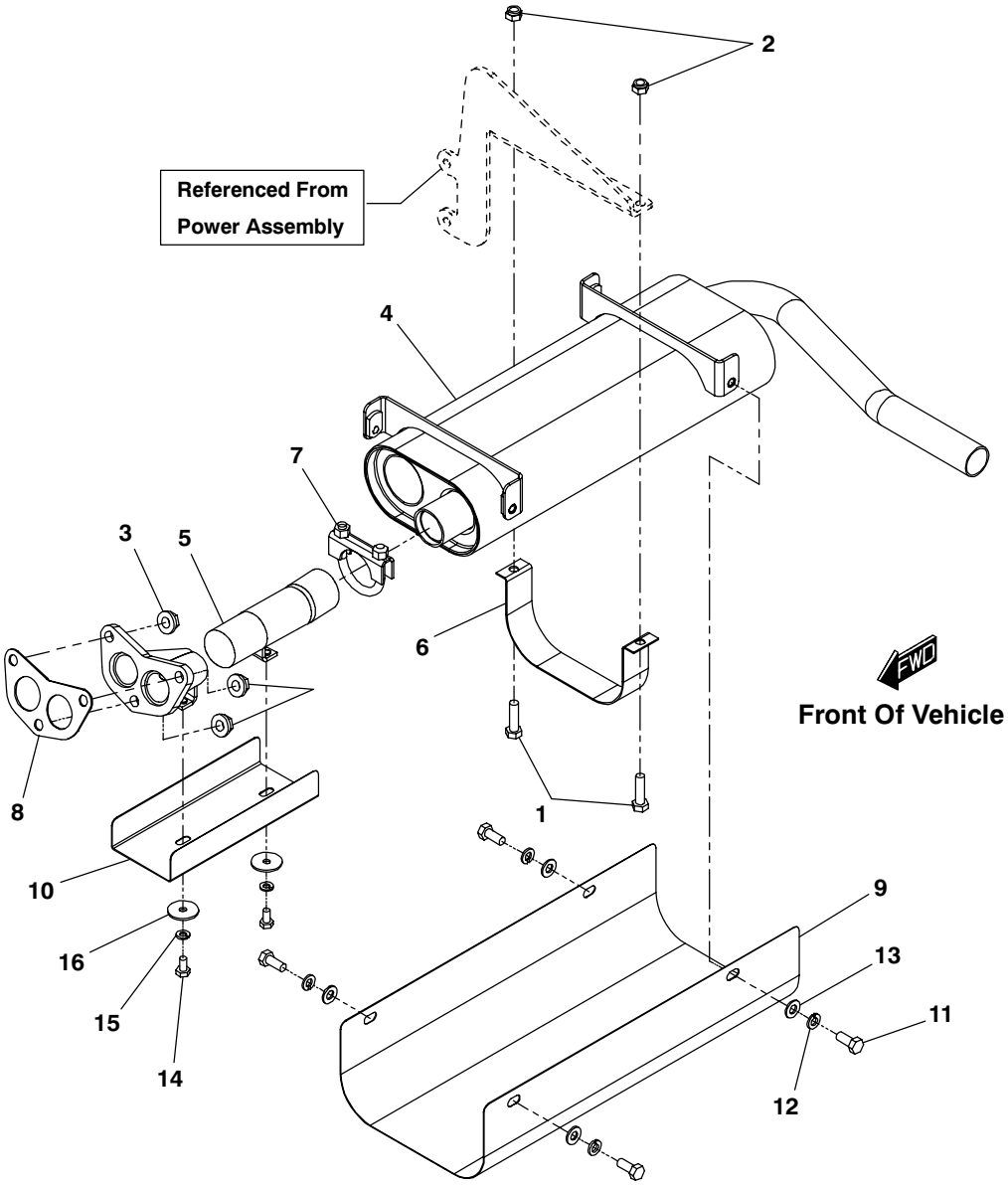
Ref. No.	Part No.	Description	No. Req'd
1	302944	Nut, jam, 9/16-18	1
2	303269	Lockwasher, 7/16	3
3	311392	Screw, 7/16-14 x 2	3
4	450077	Bolt, M16-2.00 x 90	2
5	450382	Nut, locking insert M16-2.00	2
6	450393	Washer, M16	4
7	450457	Nut, M16-2.00, flange (G10.9)	2
8	452398	Screw, M10-1.5 x 20 (8.8)	1
9	452408	Screw, M10-1.75 x 20 (G10.9)	6
10	800945	Bolt, M12-1.75 x 60 (G10.9)	2
11	452692	Screw, M6-1.00 x 12	1
12	800485	Nut, 9/16-18, left-hand	1
13	800919	Bolt, M10-1.5 x 30	4
14	809137	Clip	1
15	831405	Fitting, grease 1/4-28 (90°)	4
16	843418	Clamp, tee	1
17	841167	Bushing, silentbloc	4
18	841255	Gear, power steering	1
19	841336	Arm, pitman	1
20	841404	Rod, tie	1
21	844148	Ball joint, upper	1
22	841429	Ball joint, lower	1
23	304636	Pin, cotter 1/8 x 1 1/8	1
24	817250	Cap, grease	1
25	841630	Trunnion, control arm	1
26	841737	Shim, .060"	4
27	841738	Shim, .024"	2
28	841839	Tube, brake (right)	1
29	841841	Hose, brake	1
30	841842	Tee, union, M10-1.00 flare	1
31	842033	Plate, skid	1
32	894574	Knuckle, steering (right)	1
33	842104	Bracket, brake tube	1
34	887512	End, tie rod (RH thread)	1
35	306328	•Pin, cotter, 3/32 x 3/4	1
*	548224	•Fitting, lubrication	1
36	306825	Nut, castle, 7/16-20	1
37	816586	Retainer, grease	1
38	893234	Arm assembly, lower control	1
39	4120138	Frame assembly, front	1
40	841430	Drum, brake	1
41	800909	Nut, wheel retaining, M12-1.50	5
42	306328	Pin, cotter, 3/32 x 3/4	2
43	306825	Nut, castle, 7/16-20	2
44	887750	End, tie rod (LH thread)	1
45	306328	•Pin, cotter, 3/32 x 3/4	1
*	548224	•Fitting, lubrication	1
46	306825	Nut, castle, 7/16-20	1
47	816586	Retainer, grease	1
48	810437	Clamp	4
49	893266	Arm assembly, upper control	1
50	385174	Bearing, cone (outer)	1
51	815403	Bearing, cone (inner)	1
52	817928	Seal, grease	1
53	893206	Hub assembly	1
54	808088	•Cup, bearing (outer)	1
55	814474	•Cup, bearing (inner)	1
56	800908	•Screw, lug M12-1.50 x 42	5
57	311537	Nut, castle 3/4-16	1
58	450452	Nut, M6-1.00, flange (G10.9)	1
59	452378	Screw, M6-1.00 x 20	1
60	450455	Nut, M12-1.75 (G10.9)	12
61	452413	Screw, M12-1.75 x 60	4
62	452415	Screw, M12-1.75 x 80 (8.8)	8
63	894635	Strut ay. (shock & spring)	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

***** Not Illustrated. Although this lubrication fitting is the standard fitting used with this tie rod, it is **not** used in this application. Use Ref. No. 15, Part No. 831405.

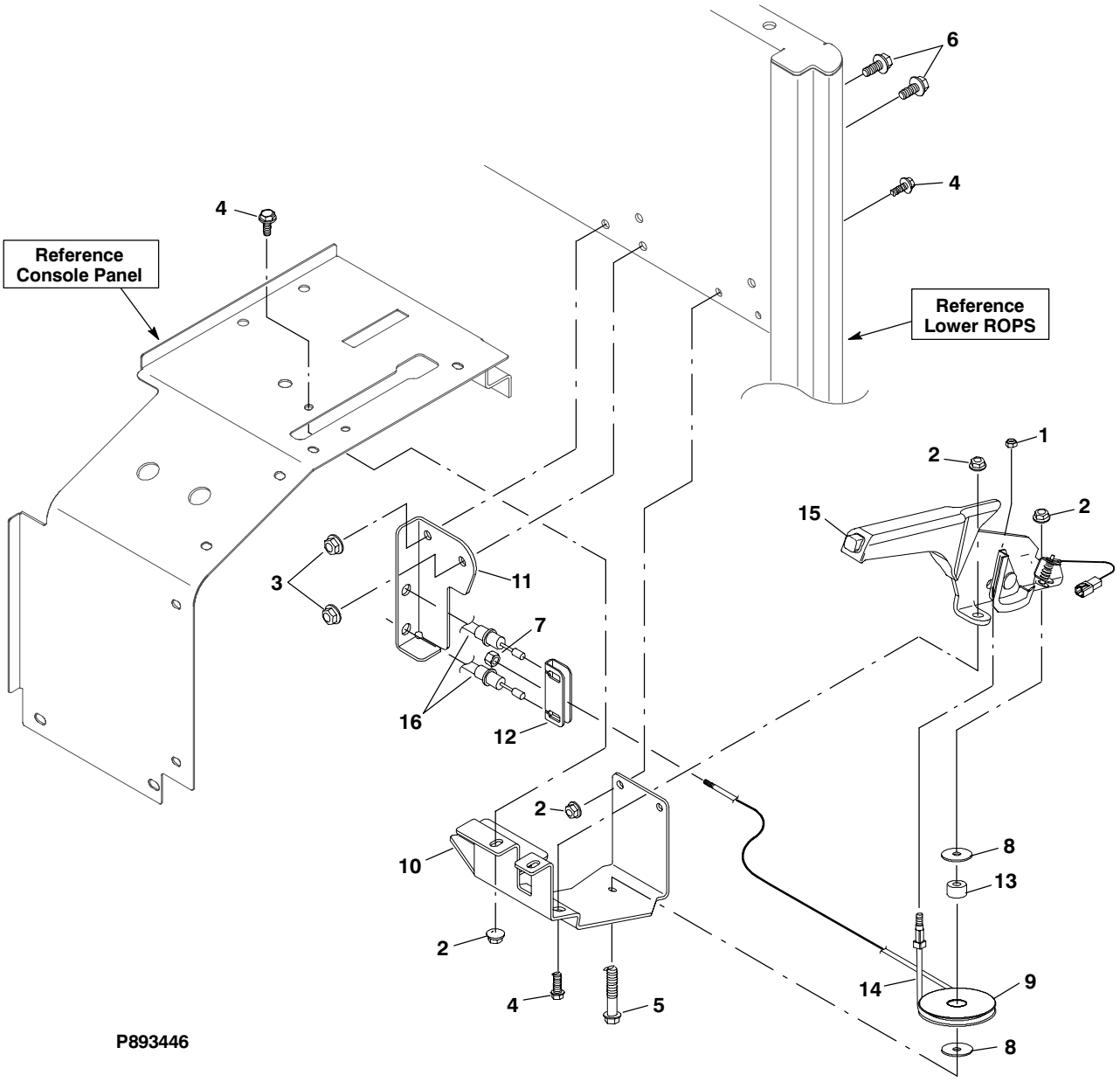
If ordering Ref. No's. 34 (887512) or 44 (887750) you will also need to order Ref. No. 15 (831405).

EXHAUST SYSTEM
SUZUKI 970 SPRAYTEK



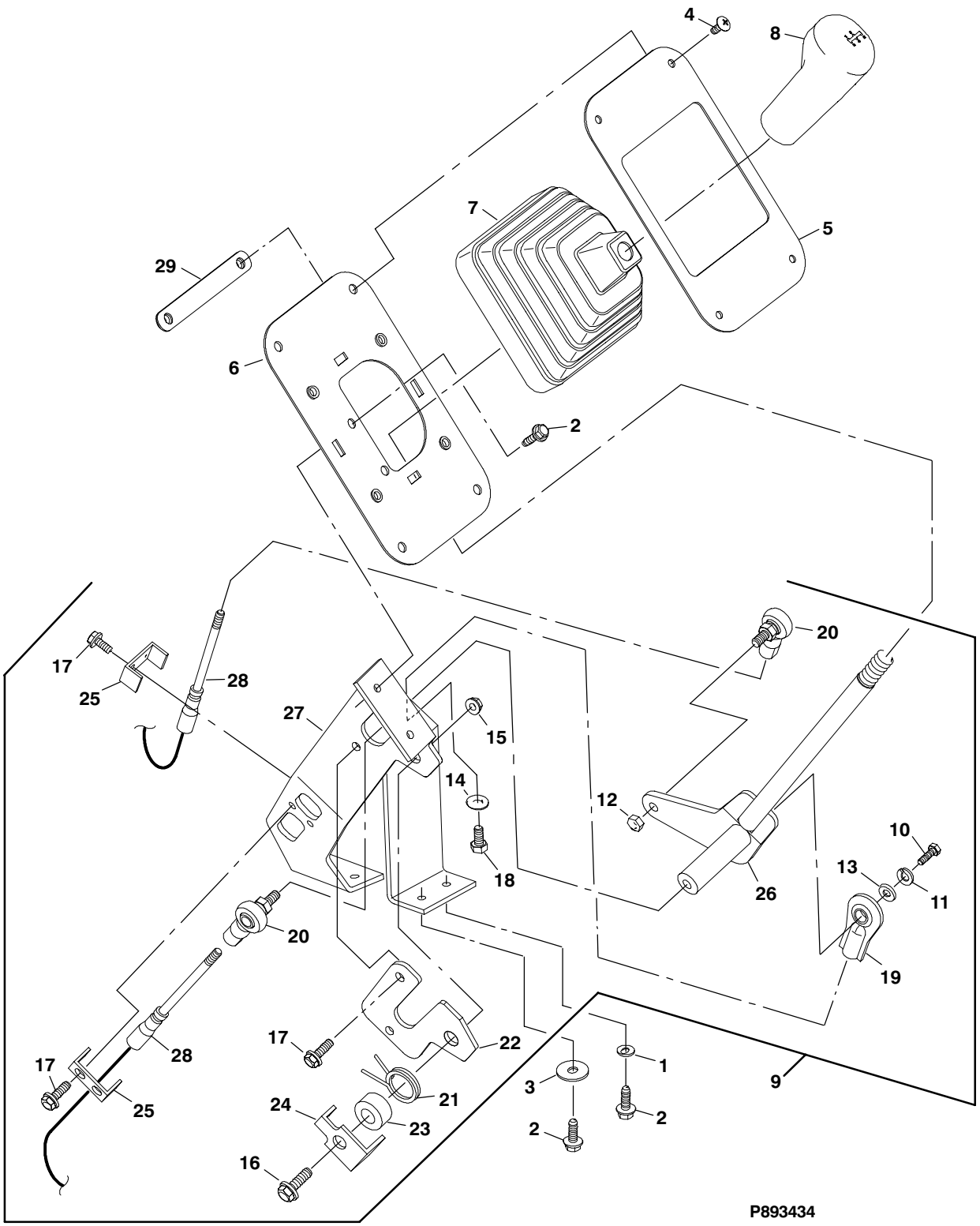
Ref. No.	Part No.	Description	No. Req'd
1	450193	Screw, M8-1.25 x 30	2
2	450378	Nut, M8 staytite	2
3	800821	Nut, M10-1.25	3
4 ◊	4119866.8	Muffler	1
5 ◊	4119868.8	Tube assembly, exhaust	1
6	838295.8	Strap, muffler hanger	1
7	841982	Clamp, exhaust tube (1 1/2")	1
8	843539	Gasket, exhaust	1
9	4119867.8	Shield, muffler	1
10	4119869.8	Shield, inlet tube	1
11	306450	Screw, 5/16-18 x 3/4	4
12	306325	Lockwasher, 5/16	4
13	103867	Washer, 5/16	4
14	306419	Screw, 1/4-20 x 1/2	2
15	306396	Lockwasher, 1/4	2
16	815680	Washer, special	2

PARK BRAKE LEVER AND CABLE
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	450377	Nut, M6-1.00 staytite	1
2	450453	Nut, M8-1.25 (10.9)	6
3	450454	Nut, M10-1.50 (10.9)	2
4	452388	Screw, M8-1.25 x 20 (8.8)	5
5	452391	Screw, M8-1.25 x 40 (8.8)	1
6	452398	Screw, M10-1.50 x 20 (8.8)	2
7	800446	Locknut, 5/16-24	1
8	809152	Washer, 5/16 x 1 3/16	2
9	827182	Pulley, 3" dia. (76 mm dia.)	1
10	845134	Bracket, park brake lever	1
11	843158	Bracket, park brake cable	1
12	843356	Equalizer, park brake	1
13	843359	Bushing, park brake	1
14	845133	Cable, park brake	1
15	894317	Lever, park brake	1
16	893583	Cable, park brake to rear wheel	2

SHIFTER and SHIFTER LINKAGE
SUZUKI 970 SPRAYTEK

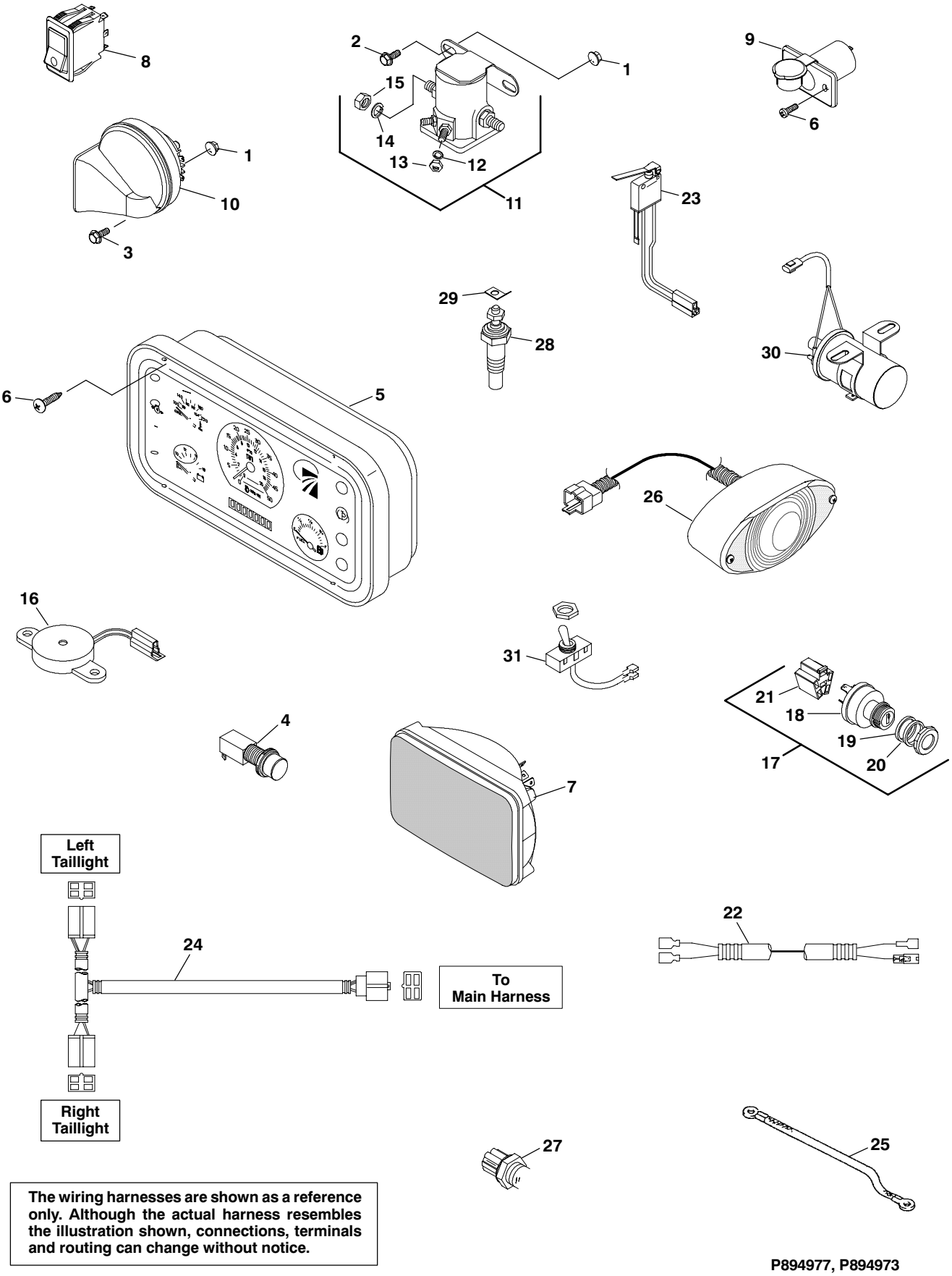


SHIFTER and SHIFTER LINKAGE
SUZUKI 970 SPRAYTEK

Ref. No.	Part No.	Description	No. Req'd
1	308090	Washer, 1/4	5
2	452695	Screw, M6-1.00 x 20, taptite	6
3	548175	Washer, 1/4 x 1.25	3
4	800582	Screw, 1/4-20 x 3/4	4
5	2703964.7	Panel, dash (right hand)	1
6	843792	Plate, shifter boot	1
7	28135-85503-5PK	Boot, shifter	1
8	28113-70B01-5PK	Knob, shifter	1
9	893966	Shifter, complete	1
10	300977	•Screw, 1/4-28 x 5/8	1
11	306396	•Lockwasher, 1/4	1
12	306397	•Nut, 1/4-28	1
13	308090	•Washer, 1/4	1
14	308091	•Washer, 1/2	1
15	450454	•Nut, M10-1.50 (G10.9)	1
16	452400	•Screw, M10-1.50 x 30 (8.8)	1
17	452695	•Screw, M6-1.00 x 20, taptite	6
18	548008	•Screw, 1/2-20 x 1	1
19	842773	•Rod end, 1/2" (female)	1
20	842774	•Ball joint, 1/4"	2
21	843614	•Spring, torsion	1
22	843679	•Plate, wear	1
23	843685	•Bushing, spring	1
24	2703951	•Tab, locating	1
25	843724	•Clamp, cable	2
26	2703953	•Selector, complete	1
27	2703956.7	•Mount, shifter	1
28	894179	•Cable, shifter	2
29	894743	Nut assembly, double (1/4-20)	1

• INDENTED PARTS NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

ELECTRICAL COMPONENTS and WIRING HARNESSES



The wiring harnesses are shown as a reference only. Although the actual harness resembles the illustration shown, connections, terminals and routing can change without notice.

P894977, P894973

ELECTRICAL COMPONENTS and WIRING HARNESSES

Ref. No.	Part No.	Description	No. Req'd.
1	450452	Nut, M6-1.00 (10.9)	3
2	452378	Screw, M6-1.00 x 20	2
3	800934	Screw, M6-1.00 x 16 (10.9)	1
4	830366	Switch, push (horn button)	1
5	841636	Panel, instrument w/tach	1
6	800943	Screw, #10-14 x 5/8	4
7	837303	Headlight, rectangular	2
8	843581	Switch, headlight	1
9	843942	Socket, 12V acc. plug	1
10	886090	Horn	1
11	889673	Solenoid	1
12	120052	•Lockwasher, #10	2
13	132520	•Nut, #10-32	2
14	306325	•Lockwasher, 5/16	2
15	306932	•Nut, 5/16-18	2
16	890000	Buzzer assembly	1
17	890154	Switch, ignition, complete	1
18	837295	•Switch, ignition	1
*	837296	•Connector	1
19	837299	•Spacer	1
20	837300	•Spacer	1
21	890158	•Connector and wire	1
22	894201	Harness, wire, fuel tank	1
23	894308	Switch (normally open)	1
24	894313	Harness, wire, taillight	1
25	39312-50F01	Wire, noise suppressor (Suzuki Models Only)	1
26	893602	Taillight	1
27	17680-50F70	Switch, fan	1
28	843857	Sender, water temperature	1
29	829787	Terminal, 45° 1/4" male	1
30	33410-85010	Coil, ignition	1
31	72-125	Switch, pump clutch	1

• INDENTED PARTS NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

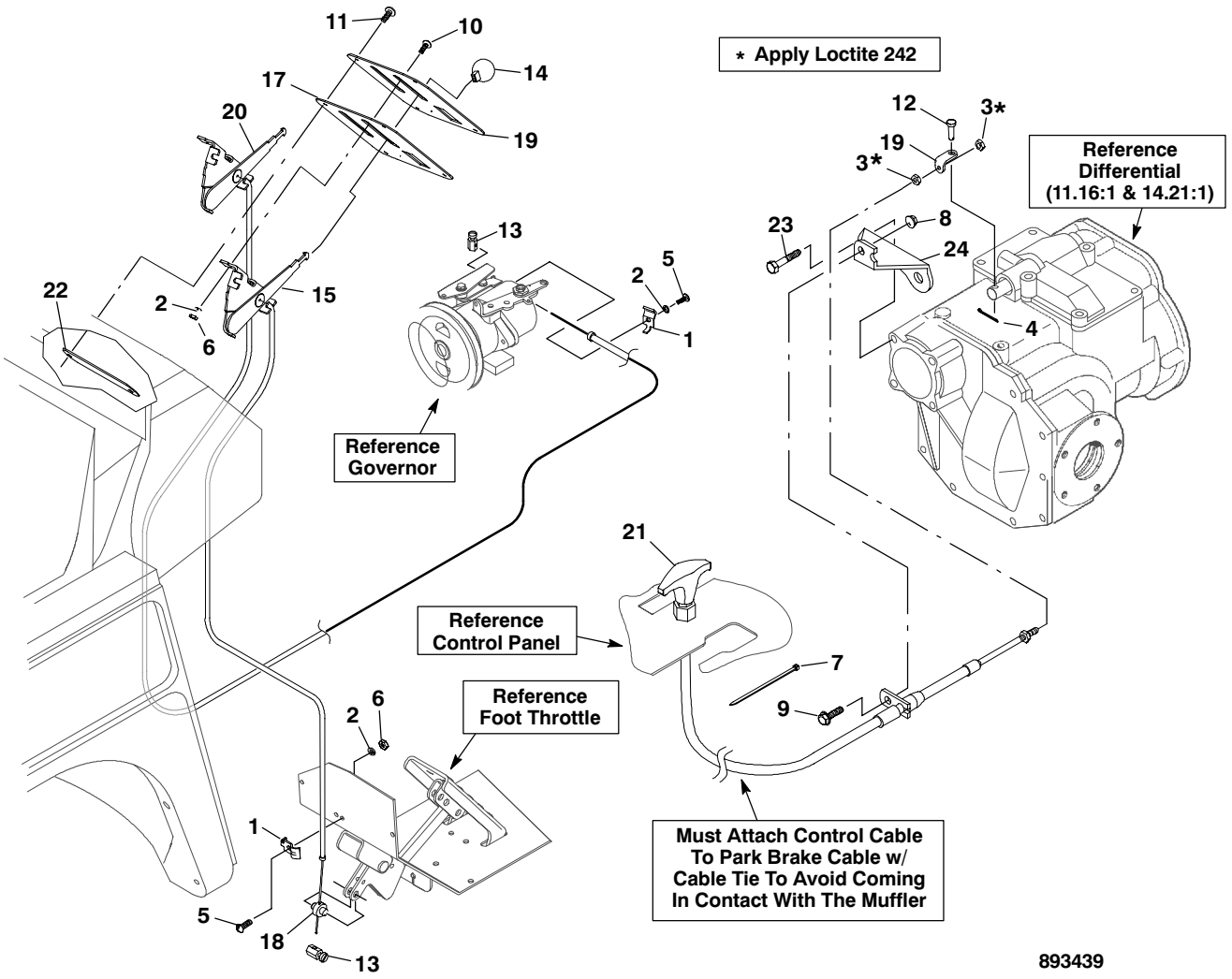
* Not Illustrated

The convoluted tubing used on the wiring harnesses can be ordered in bulk length only. Cut off the required amount for your particular application. Order the tubing as follows:

Part No. 826190 .350 i.d. sold in 50' (15.2 m) lengths

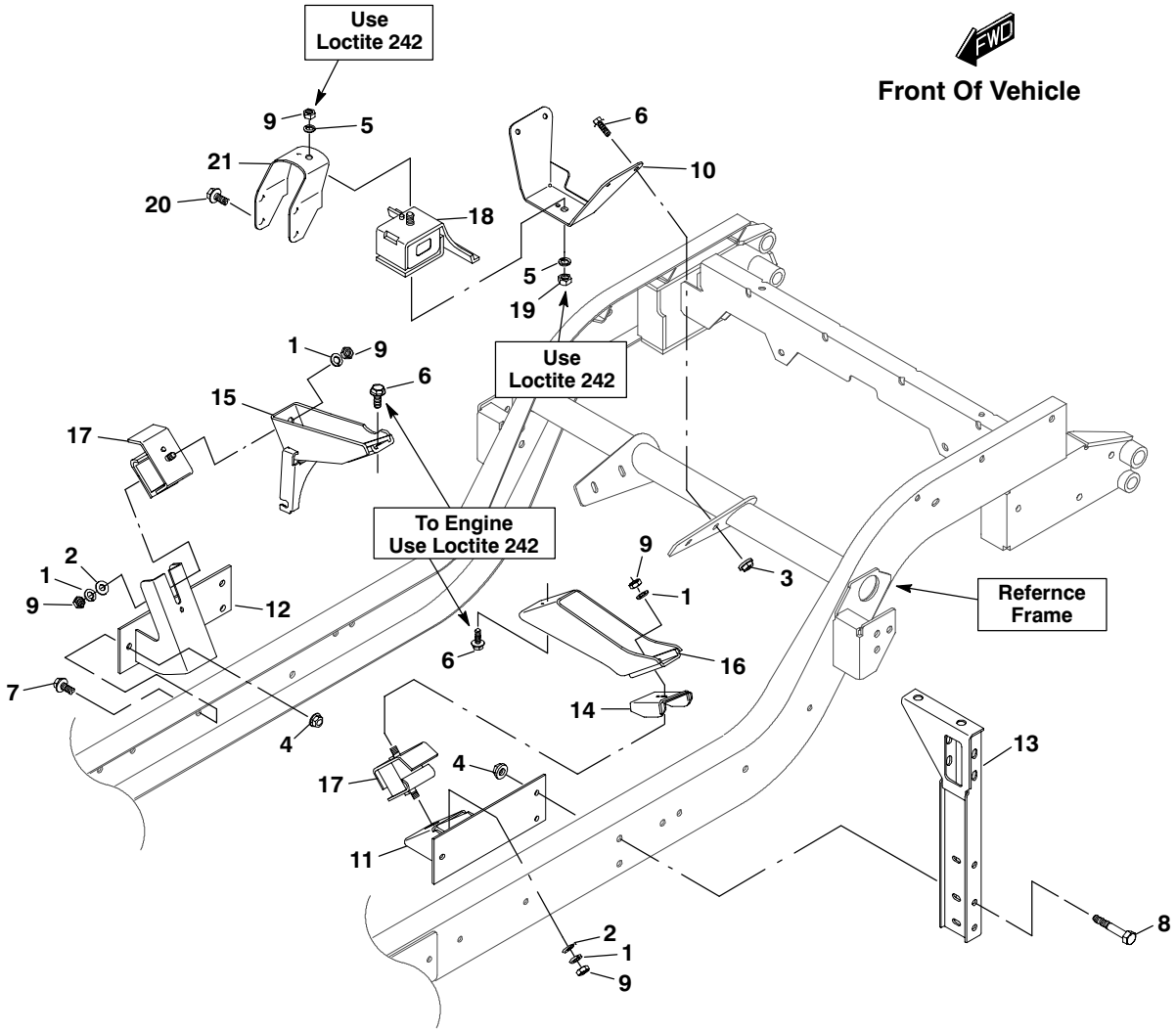
Part No. 826191 .500 i.d. sold in 25' (7.6 m) lengths

GOVERNOR HAND CONTROL
SUZUKI 970 SPRAYTEK


* Apply Loctite 242
Reference Differential (11.16:1 & 14.21:1)
Reference Governor
Reference Control Panel
Reference Foot Throttle
Must Attach Control Cable To Park Brake Cable w/ Cable Tie To Avoid Coming In Contact With The Muffler
893439

Ref. No.	Part No.	Description	No. Req'd
1	111898	Clamp, cable	2
2	120052	Lockwasher, #10	6
3	2702244	Nut, #10-32	2
4	306328	Pin, cotter 29/32 x 3/4	1
5	306514	Screw, #10-32 x 1/2	2
6	306531	Nut, #10-24	5
7	320107	Tie, cable 7 1/2 " (190.5 mm)	1
8	450452	Nut, M6-1.00 (G10.9)	1
9	452378	Screw, M6-1.00 x 20	1
10	800271	Screw, #10-24 x 1/2 (G5)	4
11	800582	Screw, 1/4-20 x 3/4	4
12	806703	Pin, clevis 5/16 x 31/32	1
13	817104	Stop, wire	2
14	827821	Knob	2
15	828049	Cable, control (hand throttle)	1
16	837043	Bracket (cable to differential)	1
17	841264	Panel, left hand (turf)	1
18	843607	Bushing, throttle cable	1
19	844116	Decal, left hand dash (turf)	1
20	844130	Cable, governor control	1
21	893067	Cable, control (hi-lo shift)	1
22	894743	Nut, double	2
23	307776	Screw, 3/8-16 x 2 3/4	2
24	836841	Bracket, hi-lo shift cable mount	1

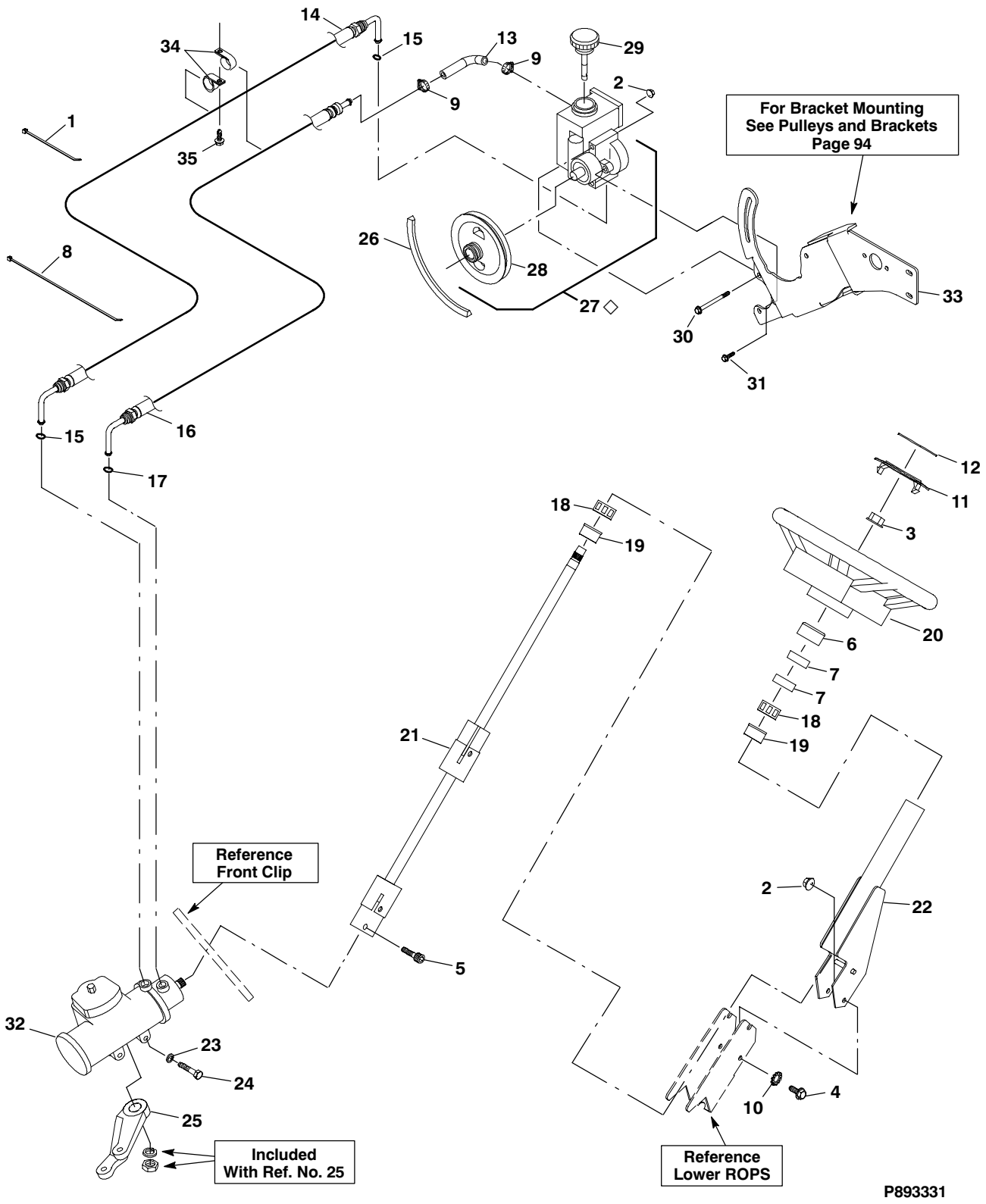
ENGINE and TRANSMISSION MOUNTS
SUZUKI 970 SPRAYTEK



2700986

Ref. No.	Part No.	Description	No. Req'd
1	303269	Lockwasher, 7/16	4
2	306982	Washer, 7/16	2
3	450453	Nut, M8-1.25 (G10.9)	6
4	452454	Nut, M10-1.50 (10.9)	6
5	450412	Lockwasher, M10	2
6	01550-08203	Bolt	4
7	452398	Screw, M10-1.50 x 20 (8.8)	2
8	452406	Screw, M10-1.50 x 90 (8.8)	4
9	800571	Nut, M10-1.25 (8.8)	5
10	843530	Bracket, transmission to frame	1
11	894293	Mount assembly, motor (left)	1
12	894292	Mount assembly, motor (right)	1
13	893525	Support, platform	2
14	2703090	Cover, engine mount	1
15	11640-85201	Support, engine (right)	1
16	11650-85550	Support, engine (left)	1
17	2703089	Mount, engine (front)	2
18	11710-77100	Bracket, rear mount	1
19	08310-00103	Nut	1
20	2702475	Screw	4
21	11741-85200	Support, transmission	1

STEERING WHEEL, STEERING SHAFT, CONNECTING HOSES
POWER STEERING PUMP and STEERING GEAR
SUZUKI 970 SPRAYTEK



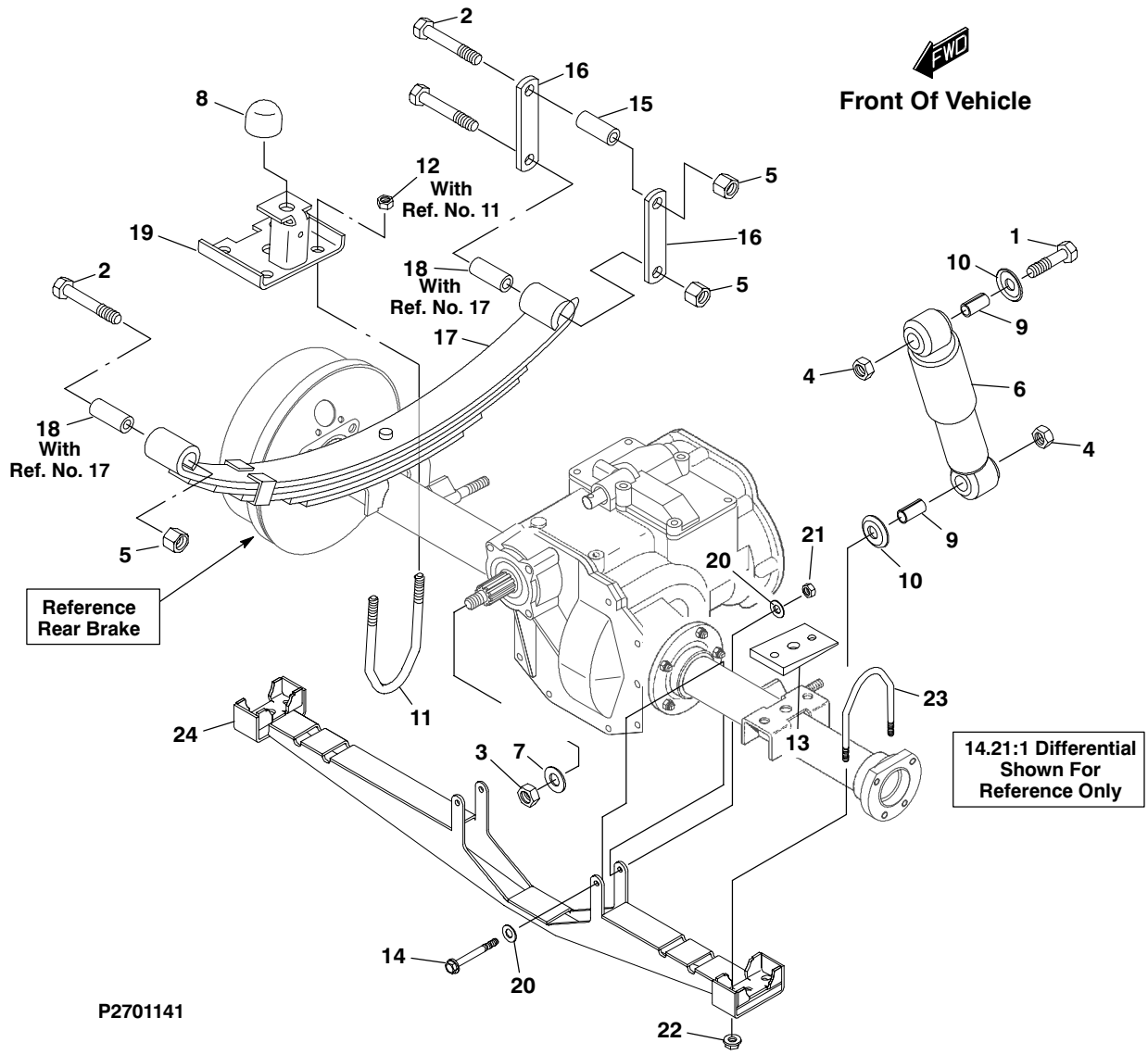
STEERING WHEEL, STEERING SHAFT, CONNECTING HOSES
POWER STEERING PUMP and STEERING GEAR
SUZUKI 970 SPRAYTEK

Ref. No.	Part No.	Description	No. Req'd
1	320107	Tie, cable, 7 1/2" (190 mm)	3
2	450453	Nut, M8-1.25 (10.9)	4
3	450457	Nut, M16-2.00	1
4	800930	Screw, M8-1.25 x 16 (8.8)	2
5	450739	Screw, M10-1.50 x 30 (12.9)	1
6	2700453	Cover	1
7	819923	Collar, foam	2
8	823549	Tie, cable, 15 1/2" (394 mm)	2
9	830930	Clamp	2
10	306799	Lockwasher, 5/16 external, shakeproof	2
11	840017	Cover, steering wheel center	1
12	839862	•Decal, steering wheel	1
13	840222	Hose, 3/8 i.d. x 90° elbow	1
14	843767	Hose, steering pressure	1
15	111838	•'O'-Ring	2
16	843768	Hose, steering return	1
17	111838	•'O'-Ring	1
18	808060	Bearing, needle	2
19	828590	Housing, bearing	2
20	892228	Wheel, steering (w/o horn)	1
21	893344	Shaft, steering	1
22	893571	Tube, steering mount	1
23	303269	Lockwasher, 7/16	3
24	311392	Screw, 7/16-14 x 2	3
25	841336	Arm, pitman	1
26	836854	V-belt (Suzuki 660)	1
27◇	892534	Pump, power steering	1
28	839907	•Pulley, steering pump	1
29	2700573	•Cap, steering reservoir	1
30	452394	Screw, M8-1.25 x 70 (8.8)	2
31	452388	Screw, M8-1.25 x 20 (8.8)	1
32	841255	Gear, power steering	1
33	842988	Bracket, alternator mounting	1
34	809092	Clamp, tube	2
35	800943	Screw, tap #10-14 x 5/8	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

◇ Service Parts for the pump are available at automotive centers. Refer to 1991-92 Buick Regal with a 3.8L V6 engine (Saginaw Pump #26025515).

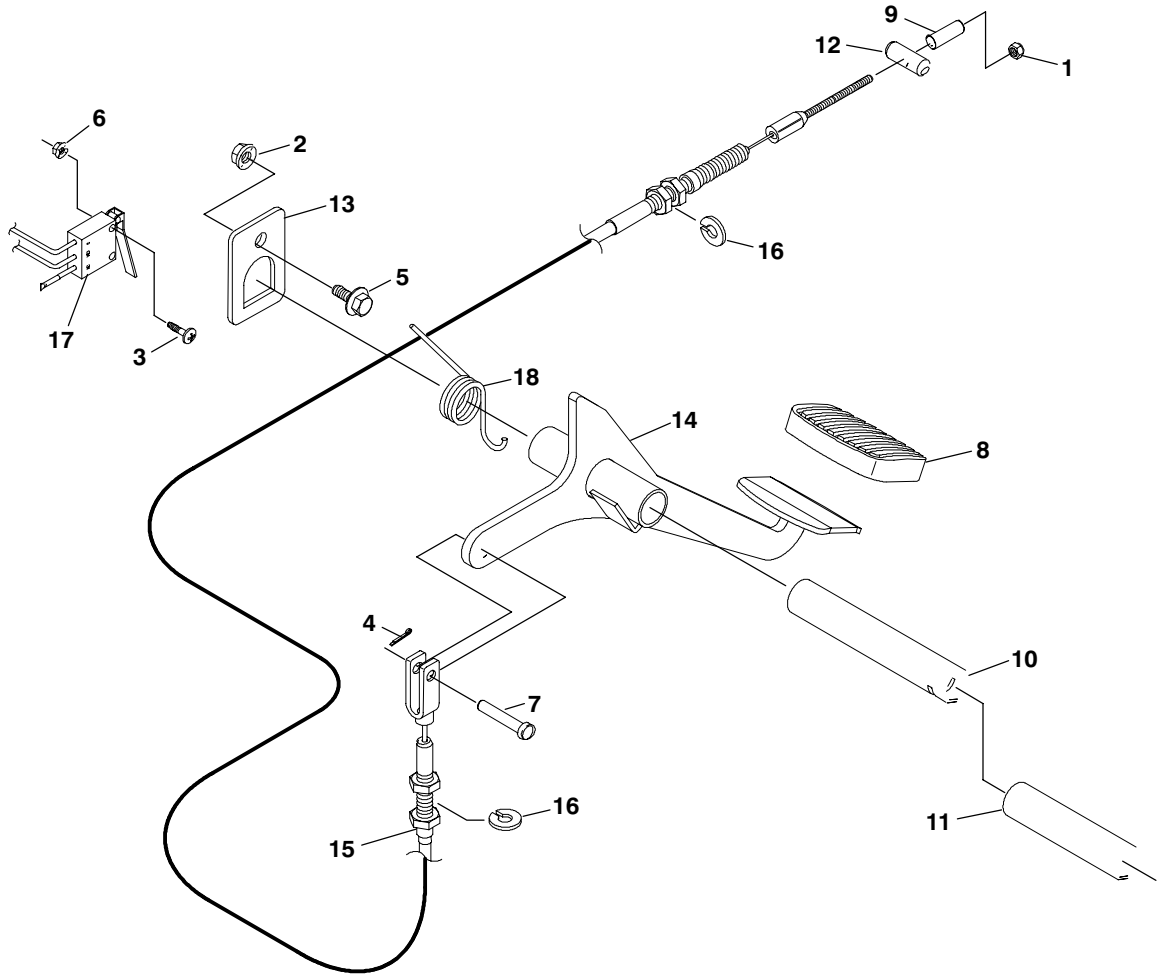
REAR SPRING, SHACKLES and REAR SHOCK ABSORBERS SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	311396	Screw, 7/16-14 x 2 1/4	2
2	311398	Screw, 1/2-13 x 3 1/2	6
3	800198	Nut, 1/2-20 crownlock	1
4	800294	Nut, 7/16-14 crownlock	4
5	800602	Nut, 1/2-13	6
6	807332	Shock absorber	2
7	809180	Washer, 7/16	1
8	813850	Bumper, rubber	2
9	823621	Bushing	4
10	825500	Washer, 3/8	4
11	829044	U-bolt, 2"	2
12	548061	•Nut, 7/16-20 unitorq	2
13	838409	Spacer, leaf spring	2
14	311213	Screw, 3/8-16 x 3 (G5)	2
15	843238	Bushing, nylatron	2
16	843876	Shackle, rear spring	4
17	893862	Spring, leaf	2
18	843238	•Bushing, nylatron	2
19	893613	Upstop	2
20	306405	Washer, 3/8	4
21	603773	Locknut, 3/8-16	2
22	800612	Nut, 7/16-20	4
23	2701148	U-bolt, 2"	2
24	2701103.7	Truss, spray truck	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

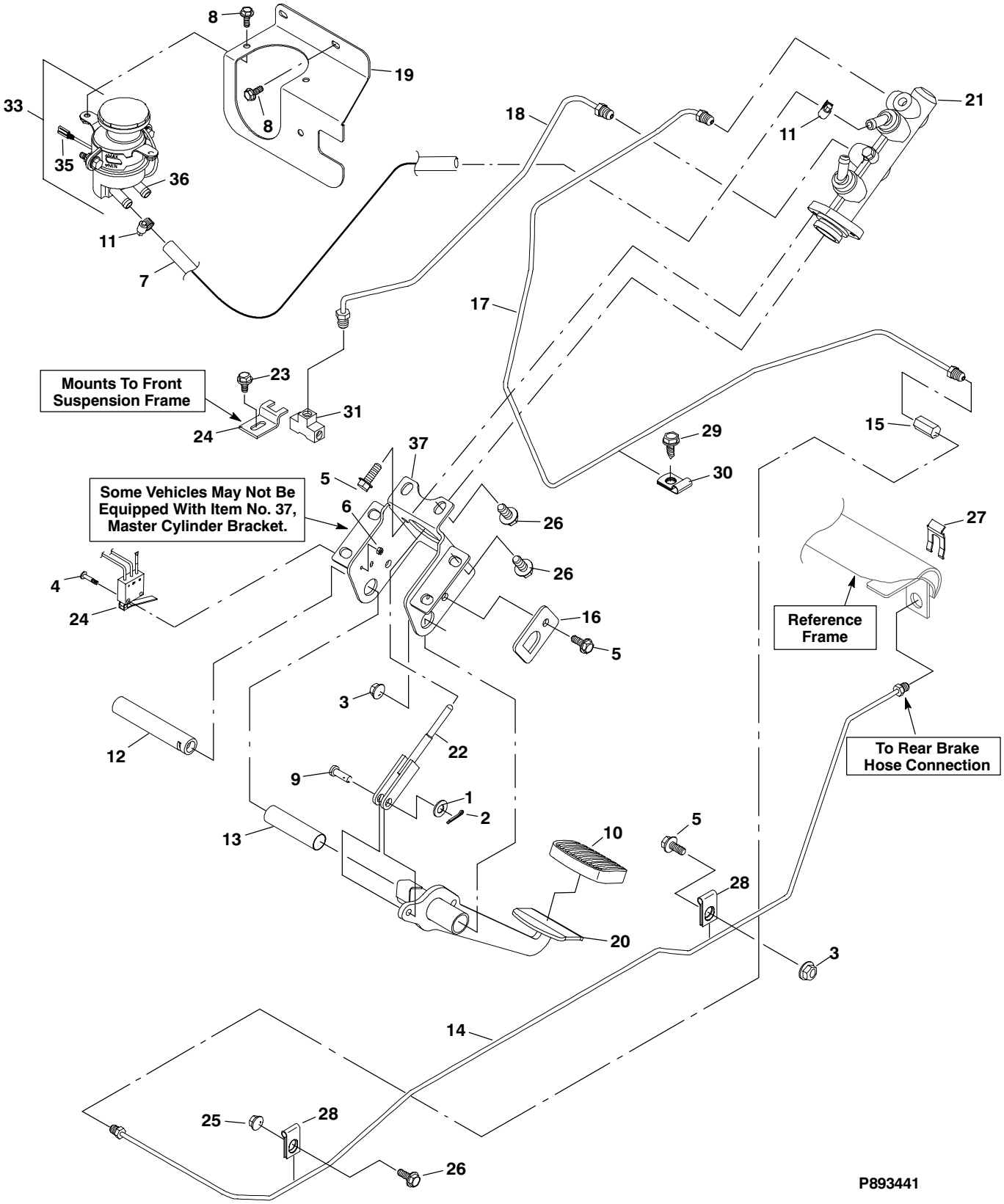
CLUTCH LINKAGE
SUZUKI 970 SPRAYTEK



P893668

Ref. No.	Part No.	Description	No. Req'd
1	450377	Nut, M6-1.00, staytite	1
2	450453	Nut, M8-1.25 (G10.9)	1
3	450510	Screw, M3-.50 x 20	2
4	306328	Pin, cotter, 3/32 x 3/4	1
5	452388	Screw, M8-1.25 x 20 (8.8)	1
6	452424	Nut, flange M3-.50	2
7	806714	Pin, clevis, 5/16 x 15/16	1
8	810152	Cover, pedal	1
9	833273	Bushing	1
10	840725	Pin, brake pivot	1
11	840726	Bearing, brake pivot	1
12	842010	Bushing, clutch arm	1
13	842935	Tab, locking	1
14	892933	Lever, clutch	1
15	894299	Cable, clutch	1
16	844202	Washer, slotted	2
17	890808	Switch, clutch interlock	1
18	844611	Spring, torsion	1

HYDRAULIC BRAKES
4-WHEEL MODELS WITH FRONT BRAKES
SUZUKI 970 SPRAYTEK


Mounts To Front Suspension Frame
Some Vehicles May Not Be Equipped With Item No. 37, Master Cylinder Bracket.
Reference Frame
To Rear Brake Hose Connection
P893441

HYDRAULIC BRAKES
4-WHEEL MODELS WITH FRONT BRAKES
SUZUKI 970 SPRAYTEK

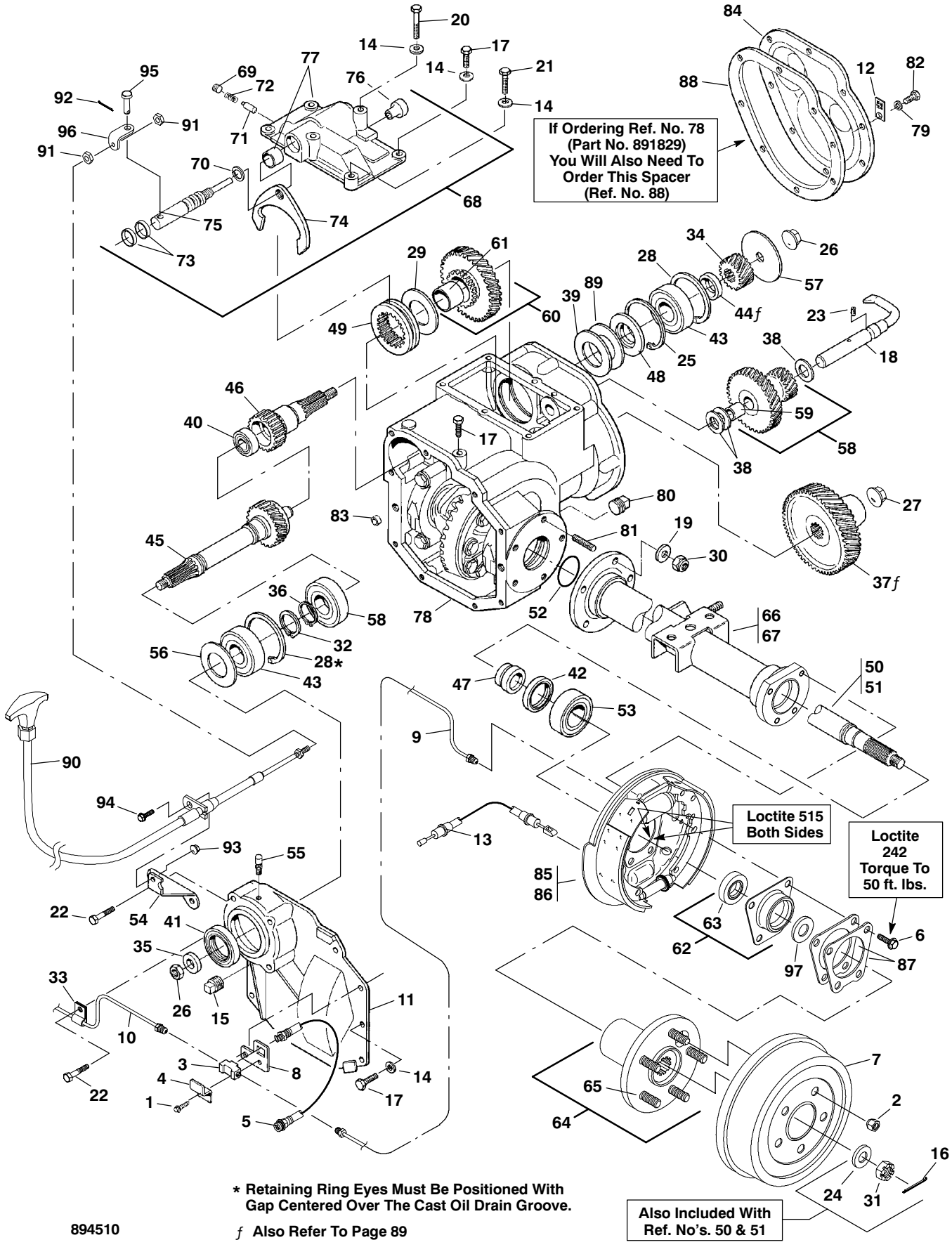
Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 5/16	1
2	306328	Pin, cotter, 3/32 x 3/4	1
3	450453	Nut, M8-1.25 (G10.9)	2
4	450510	Screw, M3-.50 x 20 (G10.9)	2
5	452388	Screw, M8-1.25 x 20 (8.8)	4
6	452424	Nut, M3-.50	2
7 ◆	7040	Hose, 5/16" brake	As Req'd.
8	800934	Screw, M6-1.00 x16 (8.8)	4
9	806714	Pin, clevis 5/16 x 15/16	1
10	810152	Cover, brake pedal	1
11	825624	Clamp, hose	4
12	840725	Pin, brake pivot	1
13	840726	Bearing, brake pivot	1
14	842051	Tube, brake line rear	1
15	842103	Union, brake fitting (metric)	1
16	842935	Tab, locking	1
17	843022	Tube, rear brake	1
18	843021	Tube, front brake	1
19	844167	Bracket, reservoir mounting	1
20	892921	Lever, brake	1
21	895113	Cylinder, brake (dual)	1
22	894167	Rod, brake	1
23	452692	Screw, tap M6-1.00 x 12	1
24	890808	Switch, micro	1
25	450454	Nut, M10-1.50 (G10.9)	1
26	452398	Screw, M10-1.50 x 20 (8.8)	7
27	809137	Clip	1
28	810435	Clamp	2
29	800943	Screw, tap #10-14 x 5/8	1
30	812445	Clamp, tube/wire	1
31	841842	Tee, M10-1.00	1
32	843418	Clamp, tee	1
33	894456	Reservoir, brake fluid	1
34 *	825886	•Terminal, 1/4 L male	2
35	826006	•Connector, 2-contact female	1
36	2702215	•Reservoir, brake fluid	1
37	2701737.7	Bracket, master cylinder	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

◆ The brake hose (Part No. 7040) is serviced as a 6' (1829 mm) length.

* Not Illustrated.

TWO-SPEED HYPOID DIFFERENTIAL (14.21:1)
SUZUKI 970 SPRAYTEK


If Ordering Ref. No. 78 (Part No. 891829) You Will Also Need To Order This Spacer (Ref. No. 88)
Loctite 515 Both Sides
Loctite 242 Torque To 50 ft. lbs.
Also Included With Ref. No's. 50 & 51

* Retaining Ring Eyes Must Be Positioned With Gap Centered Over The Cast Oil Drain Groove.

894510

ƒ Also Refer To Page 89

TWO-SPEED HYPOID DIFFERENTIAL (14.21:1)
SUZUKI 970 SPRAYTEK

Ref. No.	Part No.	Description	No. Req'd
	894509	Differential, 14.21:1	1
1	112050	•Screw, 1/4-20 x 5/8, tapping	1
2	800909	•Nut, wheel retaining	10
3	841842	•Fitting, hydraulic brake tee	1
4	832584	•Clamp, tee mount bracket	1
5	841844	•Hose, hydraulic brake	1
6	800944	•Screw, M10-1.50 x 25	8
7	841430	•Drum, brake	2
8	836959	•Bracket, tee mounting	1
9	841838	•Tube, brake, (left)	1
10	841837	•Tube, brake, (right)	1
11	836431	•Cover, front	1
12	839948	•Tag, 14.21:1 ratio	1
13	893583	•Cable, park brake	2
14	103867	•Washer, 5/16	14
15	111074	•Plug	1
16	304636	•Pin, cotter, 1/8 x 1 1/8	2
17	306322	•Screw, 5/16-18 x 7/8	12
18	891089	•Jackshaft	1
19	306405	•Washer, 3/8	10
20	306423	•Screw, 5/16-18 x 1 3/4	2
21	306435	•Screw, 5/16-18 x 1 1/4	1
22	307776	•Screw, 3/8-16 x 2 3/4	3
23	548201	•Screw, set, 5/16-18 x 5/16	1
24	845356	•Washer	2
25	548952	•Lockring	1
26	800559	•Nut, 1/2-20, crownlock	2
27	800973	•Nut, 3/4-16, crownlock	1
28	800737	•Ring, retaining	2
29	844956	•Bearing, bronze thrust	1
30	805837	•Locknut, special	10
31	800743	•Nut, 3/4-16, slotted	2
32	800695	•Ring, retaining	1
33	810435	•Clamp	1
34	842359	•Pinion, 15 tooth	1
35	809180	•Washer, special	1
36	809254	•Ring, retaining	1
37	842360	•Gear, 52 tooth	1
38	811992	•Shim, cluster gear	3
39	811993	•Bearing, thrust	1
40	812009	•Bearing, ball	1
41	812335	•Seal, oil	1
42	838539	•Seal, oil	2
43	836693	•Bearing, ball	3
44	836420	•Spacer, pinion, .625" (15.9 mm)	1
or	844750	•Spacer, pinion, .750" (19.0 mm)	1
45	836421	•Shaft, input	1
46	836422	•Shaft, main	1
47	836426	•Collar, axle bearing	2
48	845034	•Collar, thrust	1
49	836429	•Collar, engaging	1
50▼	2700530	•Shaft assembly (left)	1
(50)	2700514	••Shaft, axle (left) 23.27" (591.05 mm)	1
51▼	2700531	•Shaft assembly (right)	1
(51)	2700515	••Shaft, axle (right) 29.21" (741.93 mm)	1
52	836694	•Seal, 'O' ring	2
53	836695	•Bearing, tapered roller	2
54	836841	•Bracket	1
55	836852	•Breather	1
56	837020	•Baffle, vent	1
57	836692	•Baffle, oil scoop	1
58	894519	•Gear, cluster	1
59	844087	••Bushing	2
60	894886	•Gear, driven	1
61	812006	••Bushing	2
62	893519	•Retainer, complete w/seal	2
63	838539	••Seal, bearing	1
64	2701408	•Hub	2
65	800908	••Screw, wheel retaining	5
66	893588	•Housing, axle (left)	1
67	893590	•Housing, axle (right)	1
68	889780	•Cover ay., shift	1
69	548204	••Set screw, 3/8-16 x 3/8	1
70	548937	••Lockwasher	1
71	807366	••Button, positioning	1
72	2700493	••Spring	1
73	831099	••Seal	2
74	836657	••Fork, shift	1
75	836658	••Shaft, shift	1
76	836662	••Bushing, guide	1
77	889925	••Cover	1
78	891829	•Housing, carrier w/gears	1
79	103867	••Washer, 5/16	8
80	111074	••Plug	1
81	111758	••Stud	10
82	306322	••Screw, 5/16-18 x 7/8	8
83	517226	••Bushing	2
84	836443	••Cover, rear	1
85	◇	•Brake, rear complete, (right)	1
86	◇	•Brake, rear complete, (left)	1
87	844813	•Ring, backing	4
88	841781	•Spacer, diff. cover (rear)	1
89	844951	•Shim, .003	1
	844952	•Shim, .005	1
	844953	•Shim, .010	1
90	893067	Cable, control (2 speed hi-low)	1
91	132520	Nut, #10-32	2
92	306328	Pin, cotter, 3/32 x 3/4	1
93	450452	Nut, M6-1.00 (10.9)	1
94	452378	Screw, M6-1.00 x 20	1
95	806703	Pin, clevis, 5/16 x 29/32	1
96	837043	Bracket	1
97	2701374	Washer, hardened	2

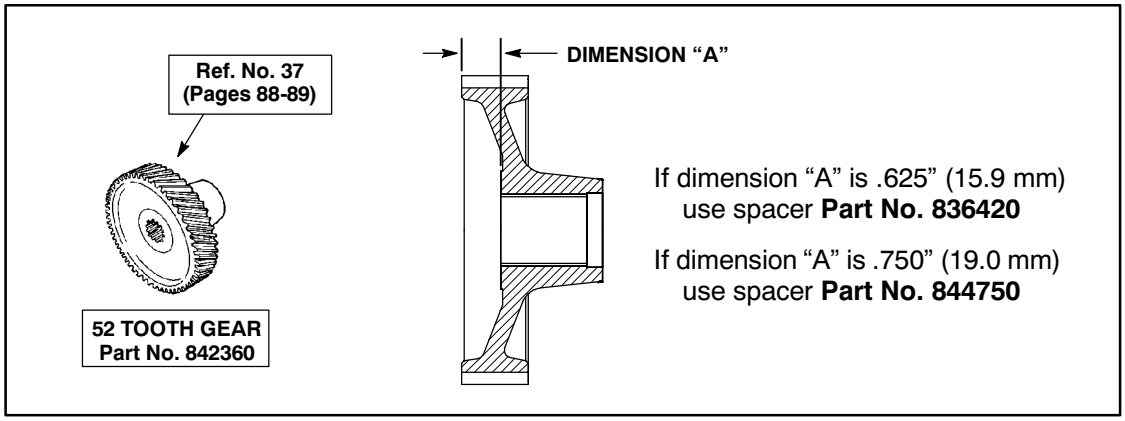
• INDENTED PARTS NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

◇ Refer to the parts breakdown for the brakes on Page 100.

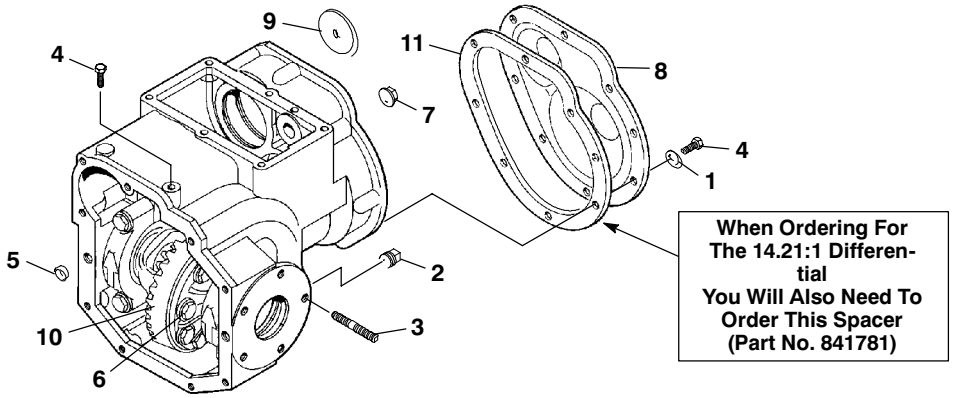
▼ Also includes Ref. No's. 16, 24 & 31.

TWO-SPEED HYPOID DIFFERENTIAL 14.21:1 (con't.)
SUZUKI 970 SPRAYTEK

Two (2) different pinion spacers (Reference No. 44 on Pages 88-89) have been used in the 14.21:1 differential Part No. 894826. To determine which spacer is the correct one for your particular application, the 52-tooth gear, Part No. 842360 (Item No. 37 on Pages 88-89) must be measured as shown.


Ref. No. 37
(Pages 88-89)
52 TOOTH GEAR
Part No. 842360
DIMENSION "A"
If dimension "A" is .625" (15.9 mm) use spacer **Part No. 836420**
If dimension "A" is .750" (19.0 mm) use spacer **Part No. 844750**

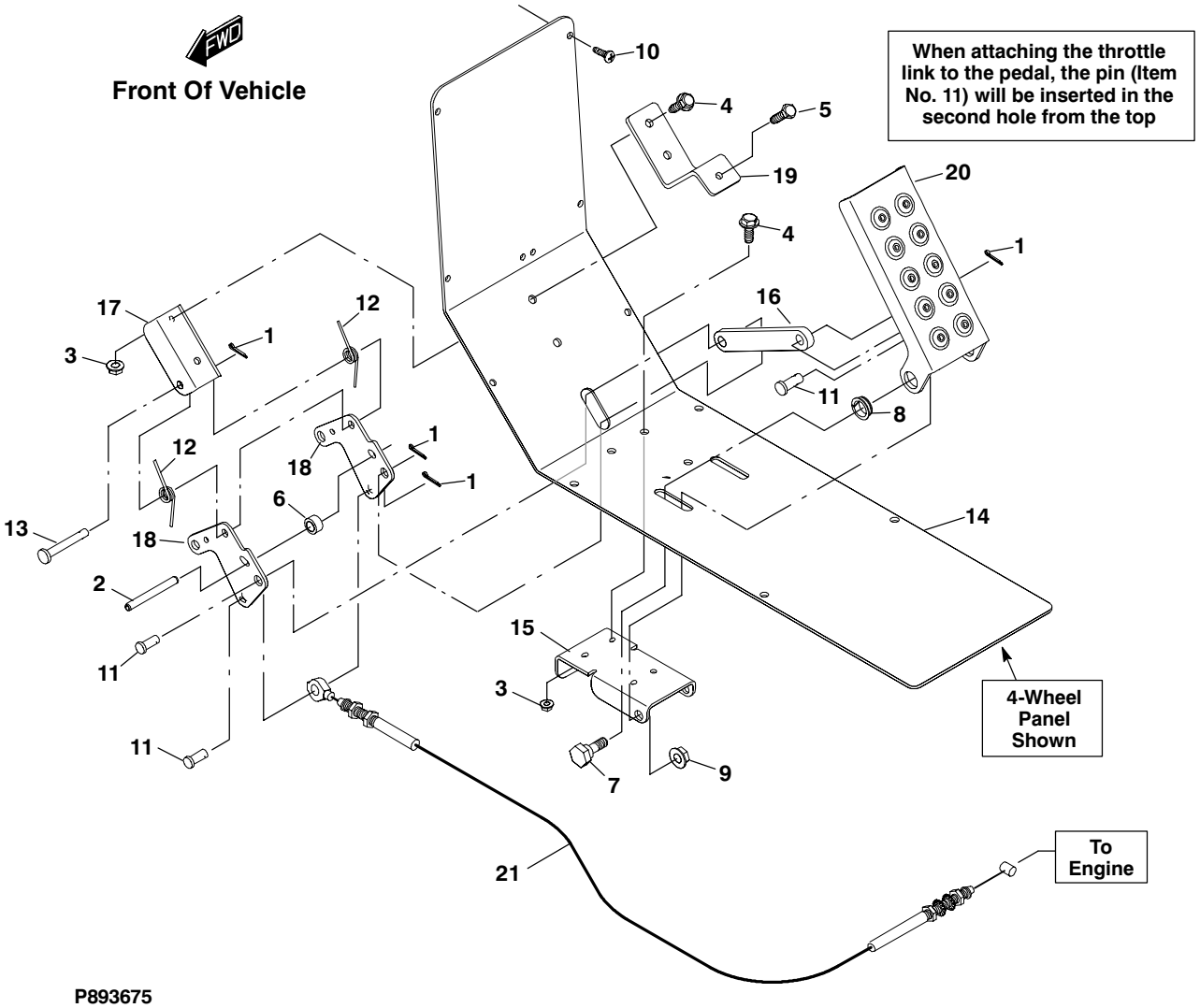
HOUSING and GEAR ASSEMBLY FOR 14.21:1 DIFFERENTIAL, SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
	891829	Housing and gear assembly	1
1	103867	•Washer, 5/16	8
2	111074	•Plug	1
3	111758	•Stud	10
4	306322	•Screw, 5/16-18 x 7/8	9
5	517226	•Bushing	2
6	800717	•Screw, 3/8-24 x 13/16	10
7	800718	•Nut, 3/4-16 hex lock	1
*	814476	•Cup, bearing (2.53 o.d.)	1
8	836443	•Cover, rear	1
*	836675	•Cup, bearing (2.89 o.d.)	2
*	836676	•Cone, bearing (1.63 i.d.)	2
*	836677	•Cup, bearing (2.84 o.d.)	1
*	836678	•Cone, bearing (1.375 i.d.)	1
*	836680	•Cone, bearing (1.125 i.d.)	1
9	836692	•Baffle, oil	1
10	889870	•Gear set	1
*	836681	•Shim, .003	2
*	836682	•Shim, .005	2
*	836683	•Shim, .010	2
*	836684	•Shim, .030	3
*	836685	•Shim, .003	1
*	836686	•Shim, .005	2
*	836687	•Shim, .010	4
*	836688	•Shim, .003	1
*	836689	•Shim, .005	1
*	836690	•Shim, .010	2
*	836691	•Shim, .030	2
11	841781	Spacer, rear cover (14.21:1)	1

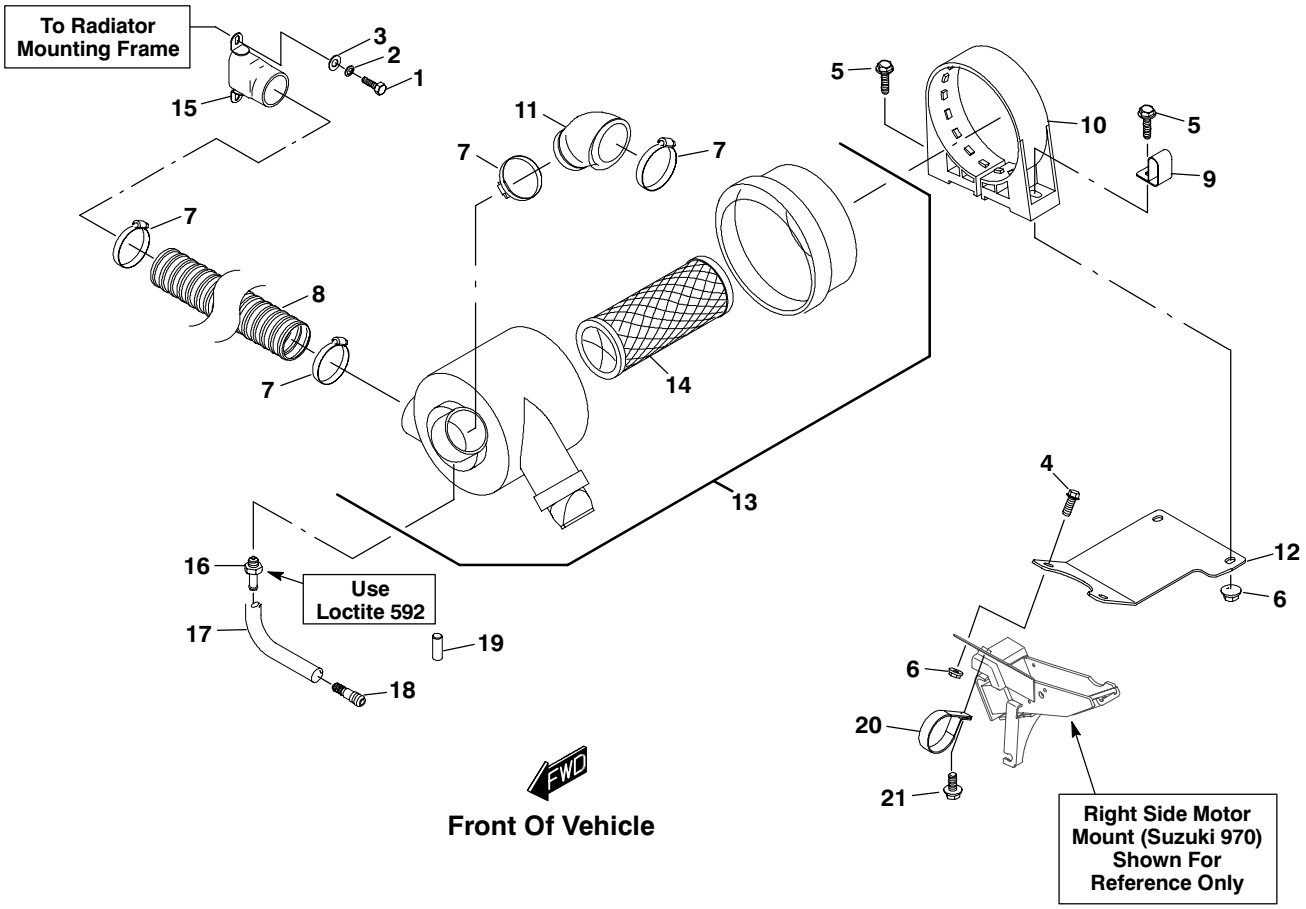
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.
* Not Illustrated.

FOOT THROTTLE AND LINKAGE
SUZUKI 970 SPRAYTEK


FWD
Front Of Vehicle
When attaching the throttle link to the pedal, the pin (Item No. 11) will be inserted in the second hole from the top
4-Wheel Panel Shown
To Engine
P893675

Ref. No.	Part No.	Description	No. Req'd
1	306328	Pin, cotter, 3/32 x 3/4	4
2	844224	Pin, roll 3/16 x 1 3/4"	2
3	450452	Nut, M6-1.00 (10.9)	6
4	452378	Screw, M6-1.00 x 20	6
5	452695	Screw, M6-1.00 x 20, taptite	1
6	515268	Bushing	2
7	524633	Screw, shoulder 5/16-18 x 1	2
8	524643	Bearing, split	2
9	548911	Nut, 5/16-18	2
10	800943	Screw, tap, #10-14 x 5/8	10
11	806714	Pin, clevis, 5/16 x 3/4	3
12	844223	Spring, torsion	2
13	830784	Pin, clevis, 1/4 x 1 7/8	1
14	841663	Panel, floor access	1
15	843562	Channel, mount	1
16	843561	Link, throttle	1
17	843562	Mount, channel	1
18	843563	Plate, pivot	2
19	843997	Bracket, stop	1
20	894159	Pedal, throttle	1
21	894540	Cable, throttle (Suzuki)	1

AIR CLEANER, BRACKET and FILTER
SUZUKI 970 SPRAYTEK

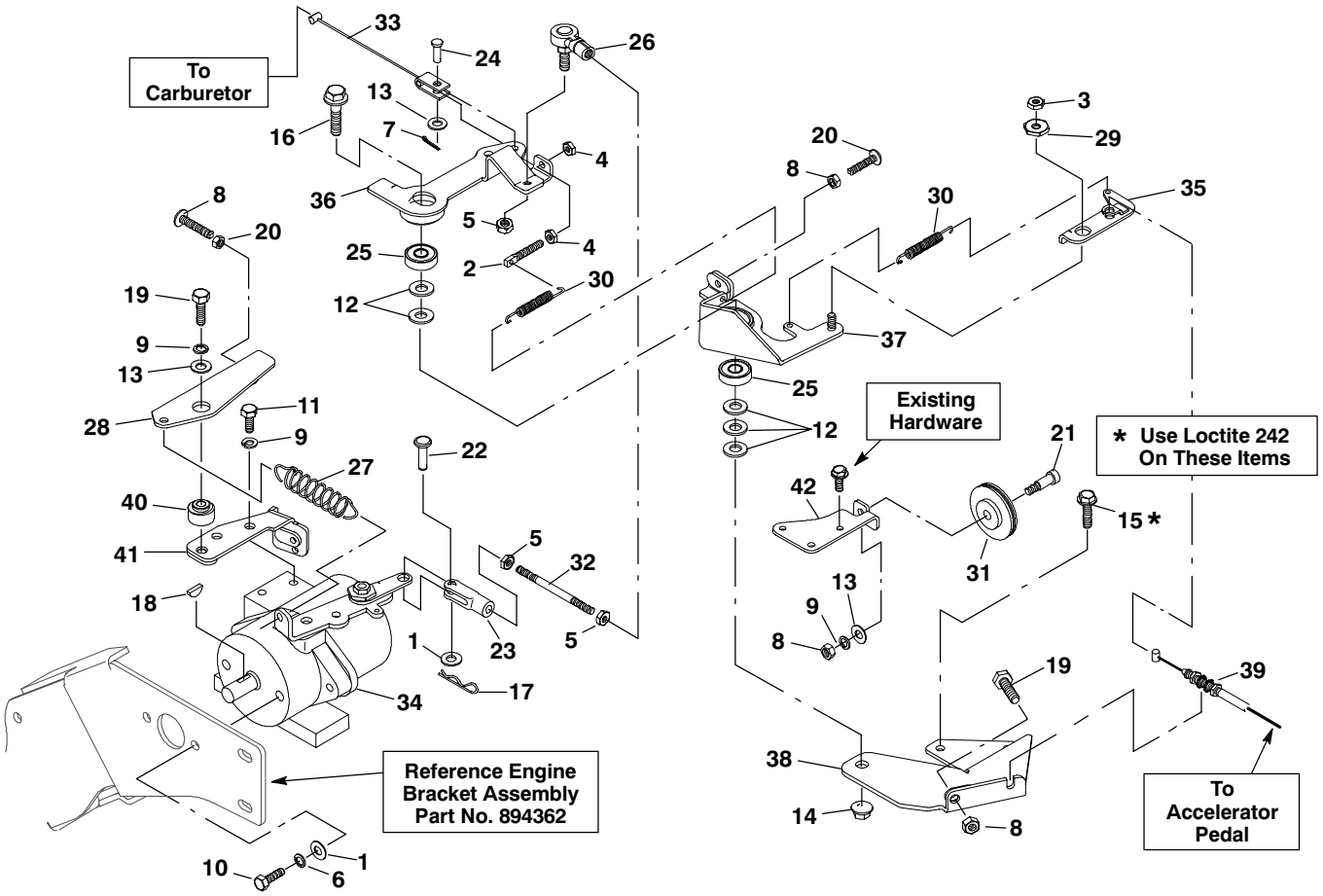

To Radiator Mounting Frame
Use Loctite 592
FWD
Front Of Vehicle
Right Side Motor Mount (Suzuki 970) Shown For Reference Only

2700987

Ref. No.	Part No.	Description	No. Req'd
1	300646	Screw, 1/4-20 x 3/4	2
2	306396	Lockwasher, 1/4	2
3	308090	Washer, 1/4	2
4	452388	Screw, M8-1.25 x 20 (8.8)	2
5	452389	Screw, M8-1.25 x 25 (8.8)	2
6	450453	Nut, M8-1.25 (8.8)	4
7	825358	Clamp, worm-drive	4
8	36094G01	Hose, air cleaner	1
9	817320	Clamp	1
10	842915	Bracket, air filter	1
11	843666	Hose, air intake	1
12	843715	Bracket, air cleaner	1
13	893182	Filter complete, air	1
14	840352	•Element, air cleaner	1
15	888549	Connector, hose (air cleaner)	1
16	841230	Connector	1
17	832246	Hose, 3/8" heater	As Req'd.
18	843831	Connector, hose	1
19	842997	Cap, 7/64 i.d. x 3/4	1
20	825884	Clamp, tube/wire	1
21	800934	Screw, M6-1.00 x 16	1

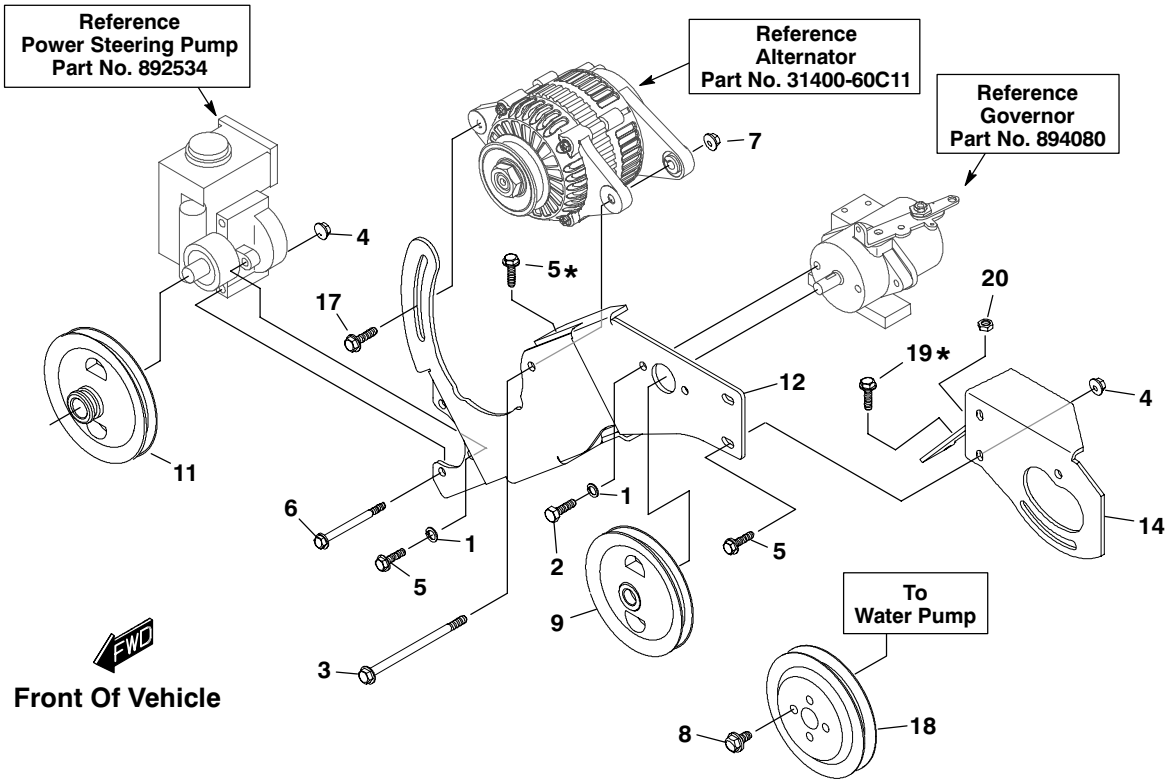
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

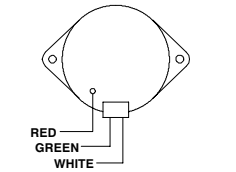
GOVERNOR AND THROTTLE LINKAGE
SUZUKI 970 SPRAYTEK



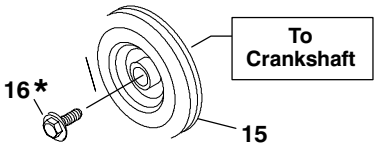
Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 3/8	3
2	111893	Screw, special #10-32	1
3	130728	Nut, 1/4-20	1
4	132520	Nut, jam #10-32	2
5	306320	Nut, 5/16-24	3
6	306325	Lockwasher, 5/16	2
7	306372	Pin, cotter 3/32 x 1/2"	1
8	306375	Nut, 1/4-20	4
9	306396	Lockwasher, 1/4	4
10	306450	Screw, 5/16-18 x 3/4	2
11	306487	Screw, 1/4-20 x 5/8	2
12	306981	Washer, 3/8	5
13	308090	Washer, 1/4	3
14	450454	Nut, M10-1.50 (G10.9)	1
15	452378	Screw, M6-1.00 x 20	2
16	452401	Screw, M10-1.50 x 40 (8.8)	1
17	548190	Pin, hair 11/16 x 1 7/8	1
18	553046	Key, woodruff 1/4 x 1/2	1
19	302288	Screw, 1/4-20 x 1	2
20	800024	Screw, 1/4-20 x 1 1/2	2
21	800927	Screw, shoulder, 1/4-20 x 5/8	1
22	806773	Pin, clevis 5/16 x 1 1/8	1
23	810722	Yoke	1
24	813379	Pin, clevis 1/4 x 3/8	1
25	830140	Bearing, ball	2
26	831586	Ball joint	1
27	833101	Spring, extension	1
28	894434	Arm assembly, governor	1
29	835271	Nut	1
30	840473	Spring, extension	2
31	843013	Pulley, governor	1
32	843536	Rod, governor arm	1
33	843567	Cable, carburetor	1
34	894080	Governor, complete	1
35	894453	Arm, throttle	1
36	894454	Arm, governor	1
37	894463	Lever	1
38	894482	Base, throttle	1
39	894540	Cable, throttle	1
40	843866	Bushing, governor	1
41	894435	Bracket assembly, governor	1
42	842753	Bracket, carburetor	1

ALTERNATOR, ENGINE BELTS, PULLEYS and BRACKETS
SUZUKI 970 SPRAYTEK

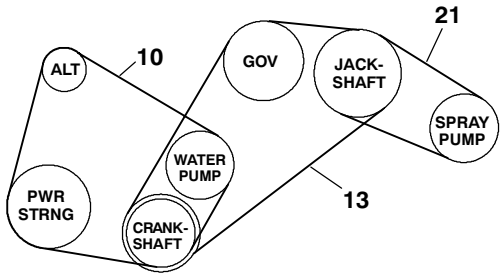




MODEL 898693



* Use Loctite 242
On These Items

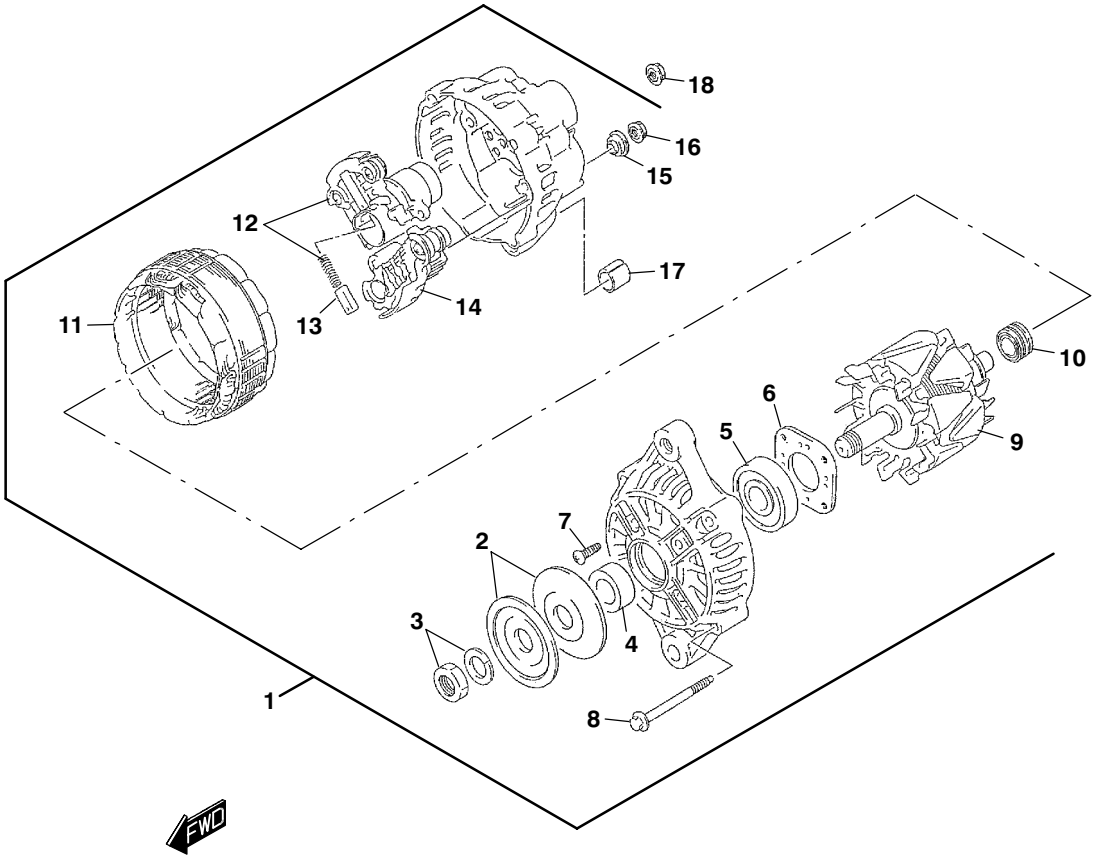


Engine Belt Diagram
MODEL 898693

Ref. No.	Part No.	Description	No. Req'd
1	306325	Lockwasher, 5/16	3
2	306450	Screw, 5/16-18 x 3/4	2
3	316909	Screw, 5/16-18 x 4 1/2	1
4	450453	Nut, M8-1.25 (G10.9)	4
5	452388	Screw, M8-1.25 x 20 (8.8)	7
6	452394	Screw, M8-1.25 x 70 (8.8)	2
7	800697	Nut, crownlock 5/16-18	1
8	800950	Screw, M6-1.00 x 10	4
9	844035	Pulley, 4.75" (governor)	1
10	836854	V-belt, 42" (1067 mm)	1
11	839907	Pulley, 5.50" (steering pump)	1
12	894362	Bracket, alt., gov., pwr strng.	1
13	67-050	Belt	1
14	2700989.7	Bracket, jackshaft	1
15	843569	Pulley, double groove	1
16	12619-60B00	Bolt, crankshaft	1
17	09118-08107	Bolt	1
18	17511-73001	Pulley, water pump	1
19	452389	Screw, M8-1.25 x 25 (8.8)	1
20	08316-10083	Nut	1
21	67-028	Belt, A28	1

All SDI Sprayer parts can be ordered directly from SDI. Ref. No's. 13 & 21 are SDI parts.
Phone (559) SDI-5555 **or Fax** (559) SDI-5591

ALTERNATOR
SUZUKI 970 SPRAYTEK

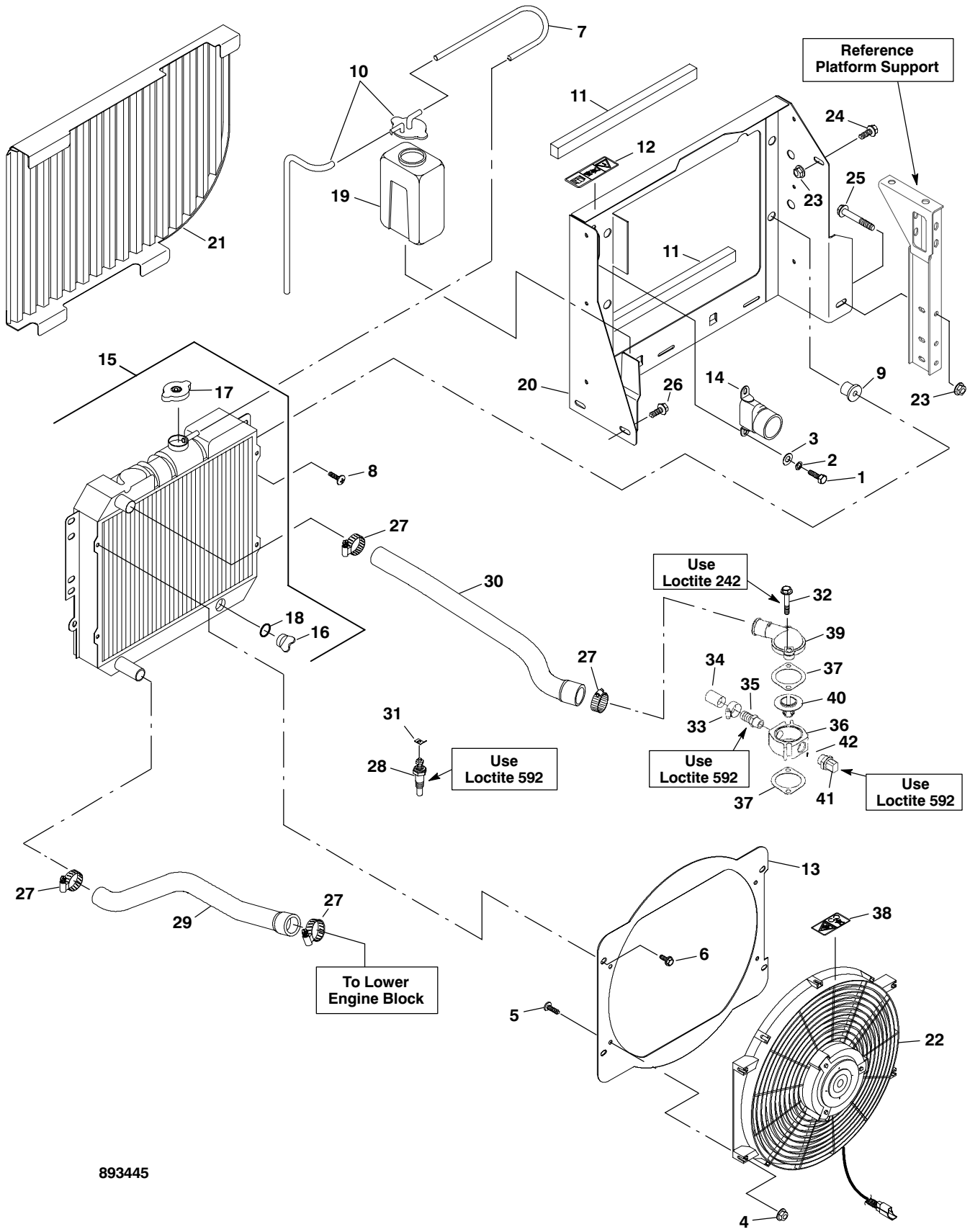


Front Of Vehicle

Ref. No.	Part No.	Description	No. Req'd
1	31400-60C11	Generator (alternator)	1
2	31771-82C20	•Pulley	2
3	4119618	•Nut	1
4	31792-51F10	•Spacer	1
5	31582-50F20	•Bearing	1
6	31585-60A10	•Retainer, bearing	1
7	31586-60A10	•Screw	1
8	4119617	•Screw kit	1
9	31710-82C20	•Rotor	1
10	4119615	••Bearing, rear	1
11	31410-85320	•Stator	1
12	32500-60C11	•Regulator	1
13	4119616	••Brush set	2
14	31621-70D11	•Rectifier	1
15	31514-82630	•Insulator	1
16	2701914	•Nut	1
17	31616-82C20	•Bushing	1
18	2701914	Nut	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

RADIATOR and COOLING SYSTEM
SUZUKI 970 SPRAYTEK

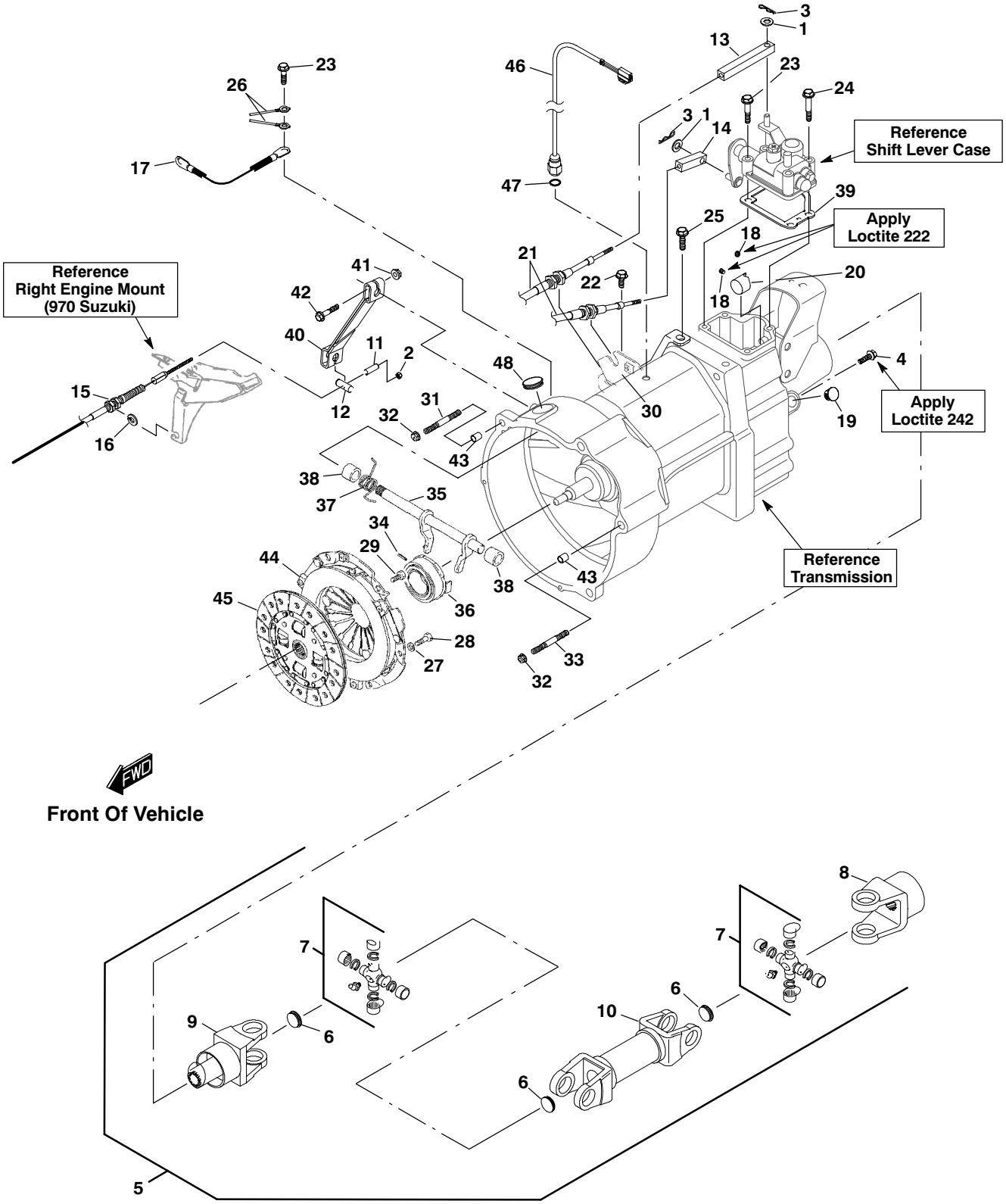


RADIATOR and COOLING SYSTEM
SUZUKI 970 SPRAYTEK

Ref. No.	Part No.	Description	No. Req'd
1	300646	Screw, 1/4-20 x 3/4	2
2	306396	Lockwasher, 1/4	2
3	308090	Washer, 1/4	2
4	450452	Nut, M6-1.00	4
5	450541	Screw, M6-1.00 x 16	4
6	452378	Screw, M6-1.00 x 20	4
7	7162	Hose, radiator overflow	As Req'd.
8	800177	Screw, 5/16-18 x 3/4	4
9	831846	Nut, isolation	4
10	833440	Cap, coolant reservoir	1
11	833512	Foam	2
12 ◇	840754	Decal, Warning Pressure	1
13	843040	Bracket, fan mounting	1
14	888549	Connector, hose (air cleaner)	1
15	894590	Radiator	1
16	833443	•Plug	1
17	889049	•Cap, radiator	1
18	833442	•O-ring	1
19	889050	Reservoir, coolant	1
20	893388	Mount, radiator	1
21	893554	Screen	1
22	894259	Fan, radiator, cooling	1
23	450453	Nut, M8-1.25 (G10.9)	2
24	452388	Screw, M8-1.25 x 20 (8.8)	1
25	452395	Screw, M10-1.50 x 80 (8.8)	1
26	452398	Screw, M10-1.50 x 20 (8.8)	2
27	820889	Clamp, tubing	4
28	843857	Sender, water temperature	1
29	843646	Hose, radiator lower	1
30	844034	Hose, radiator upper	1
31	829787	Terminal, 45° 1/4" male	1
32	452393	Screw, M8-1.25 x 60 (8.8)	2
33	832033	Clamp	1
34	833715	Plug	1
35	833858	Fitting, hose	1
36	843738	Housing, fan sender	1
37	843856	Gasket, fan switch housing	2
38	009034880	Decal, fan	1
39	17561-73000	Cap, water	1
40	17600-85831	Thermostat	1
41	17680-50F70	Switch, fan	1
42	17689-50F00	•O-ring	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

DRIVE SHAFT, CLUTCH and TRANSMISSION SHIFTER LINKAGE
SUZUKI 970 SPRAYTEK



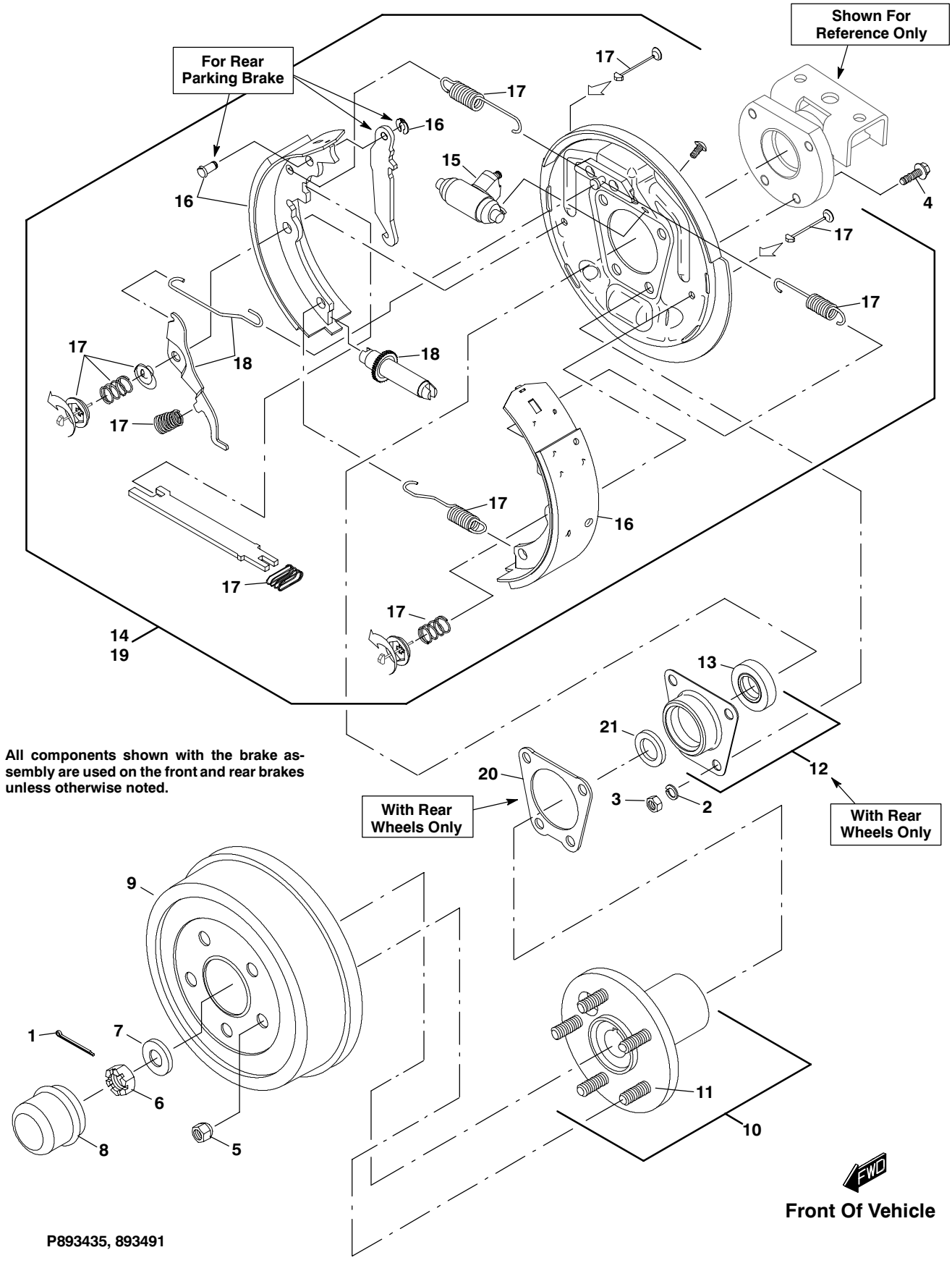
2700986, 2700987

DRIVE SHAFT, CLUTCH and TRANSMISSION SHIFTER LINKAGE
SUZUKI 970 SPRAYTEK

Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 5/16	4
2	450377	Nut, nylock M6-1.00 (8.8)	1
3	548190	Hairpin	2
4	800934	Screw, M6-1.00 x 16 (8.8)	1
5	894272	Driveshaft, complete	1
6	548482	•Plug, expansion	3
7	826284	•Cross, u-joint	2
8	826285	•Yoke, universal	1
9	894432	•Yoke, front	1
10	894433	•Shaft, drive	1
11	833273	Bushing	1
12	842010	Bushing, clutch arm	1
13	843830	Connector, shift cable	1
14	843778	Connector, shift cable	1
15	894299	Cable, clutch	1
16	844202	Washer, slotted	4
17	892811	Wire, ground, black 24" (610 mm)	1
18	548222	Set screw, #8-32	2
19	843754	Plug	1
20	844228	Stop, 5th gear lockout	1
21	894179	Cable, shifter	2
22	2702471	Screw	1
23	2702659	Screw	4
24	01550-08553	Screw	1
25	09103-08131	Screw	1
26	39312-50F01	Wire, noise suppressor	2
27	2702656	Lockwasher	2
28	09111-08035	Screw	2
29	2702547	Screw	4
30	28391-85202	Bracket, shift cables	1
31	2702758	Stud	1
32	2702689	Nut	2
33	01421-10503	Stud	1
34	09205-03019	Pin, roll	1
35	23260-85203	Shaft, clutch release	1
36	23265-85200	Bearing, clutch release	1
37	09448-20007	Spring, clutch release	1
38	09300-14017	Bushing, clutch release	2
39	845223	Gasket, shifter case	1
40	23266-85002	Arm, clutch release	1
41	2703002	Nut	1
42	01550-08353	Screw	1
43	2702690	Sleeve, alignment	2
44	22100-85200	Cover assembly, clutch	1
45	22400-85141	Disc, compression clutch	1
46	37610-80023	Switch, backup lamp	1
47	09280-11002	•O-ring	1
48	2702662G01	Plug, transmission inspection timing	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

FRONT & REAR BRAKES and HUBS
SUZUKI 970 SPRAYTEK



All components shown with the brake assembly are used on the front and rear brakes unless otherwise noted.

P893435, 893491

FRONT & REAR BRAKES and HUBS
SUZUKI 970 SPRAYTEK

Ref. No.	Part No.	Description	No. Req'd
1	304636	Pin, cotter 1/8 x 1 1/8	2
2	306325	Lockwasher, 5/16	8
3	306932	Nut, M10-1.50	8
4	800944	Screw, M10-1.50 x 25 (10.9)	8
5	800909	Nut, wheel retaining, M12-1.5	10
6	805843	Nut, castle, 5/8-18	2
7	809156	Washer, special	2
8	817250	Cap, grease	2
9	841430	Drum, brake	2
10	2701408	Hub assembly (rear)	2
11	800908	•Screw, lug, M12-1.50 x 45	10
*	893206	Hub assembly (front)	2
*	808088	•Cup, bearing (outer)	1
*	814474	•Cup, bearing (inner)	1
*	800908	•Screw, lug, M12-1.50 x 45	10
12	893519	Seal and retainer (rear)	2
13	838539	•Seal, bearing	1
14	893585	Brake, complete, front (LH)	1
*	893586	Brake, complete, front (RH)	1
15	894930	•Cylinder, wheel	1
16	894932	Kit, brake shoe	1
17	894933	Kit, spring (LH)	1
*	894934	Kit, spring (RH)	1
18	894935	Kit, adjuster repair (LH)	1
*	894936	Kit, adjuster repair (RH)	1
19	893581	Brake, complete w/lever, rear (LH)	1
*	893582	Brake, complete w/lever, rear (RH)	1
*	894931	Kit, cylinder repair	1
20	844813	Ring, retainer (rear)	2
21	2701374	Washer, hardened	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

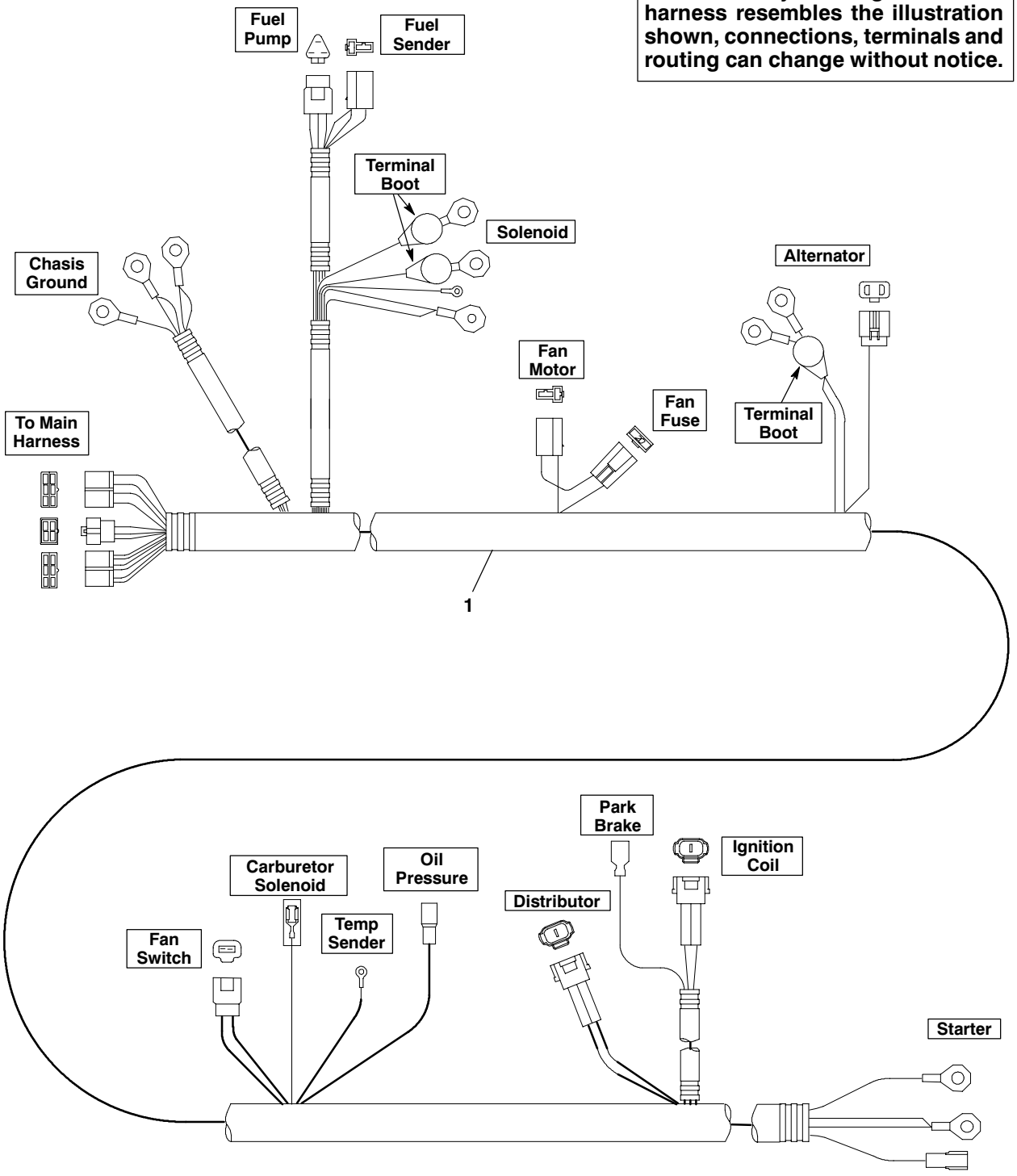
* Not Illustrated.

When ordering the front or rear brake assemblies (Part No's. 893585, 893586, 893581 & 893582) all components shown in the illustration with items No. 14 & 19 are included with the assemblies. If replacement parts are required, the individual parts will be grouped into kits as stated in the above parts list.

ENGINE WIRE HARNESS
SUZUKI 970 SPRAYTEK

Ref No.	Part No.	Description	No. Req'd.
1	894283	Harness, engine wire	1

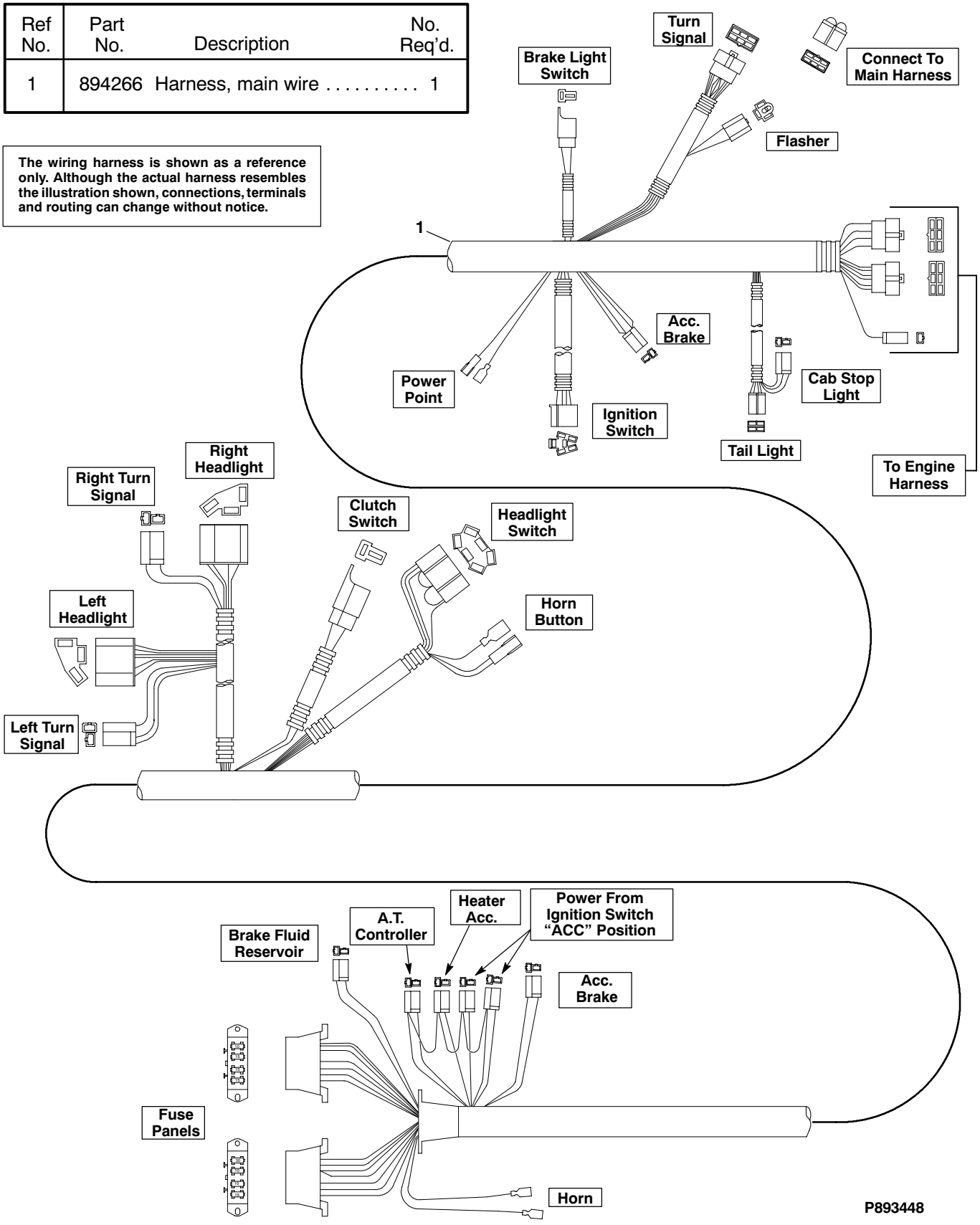
The wiring harness is shown as a reference only. Although the actual harness resembles the illustration shown, connections, terminals and routing can change without notice.



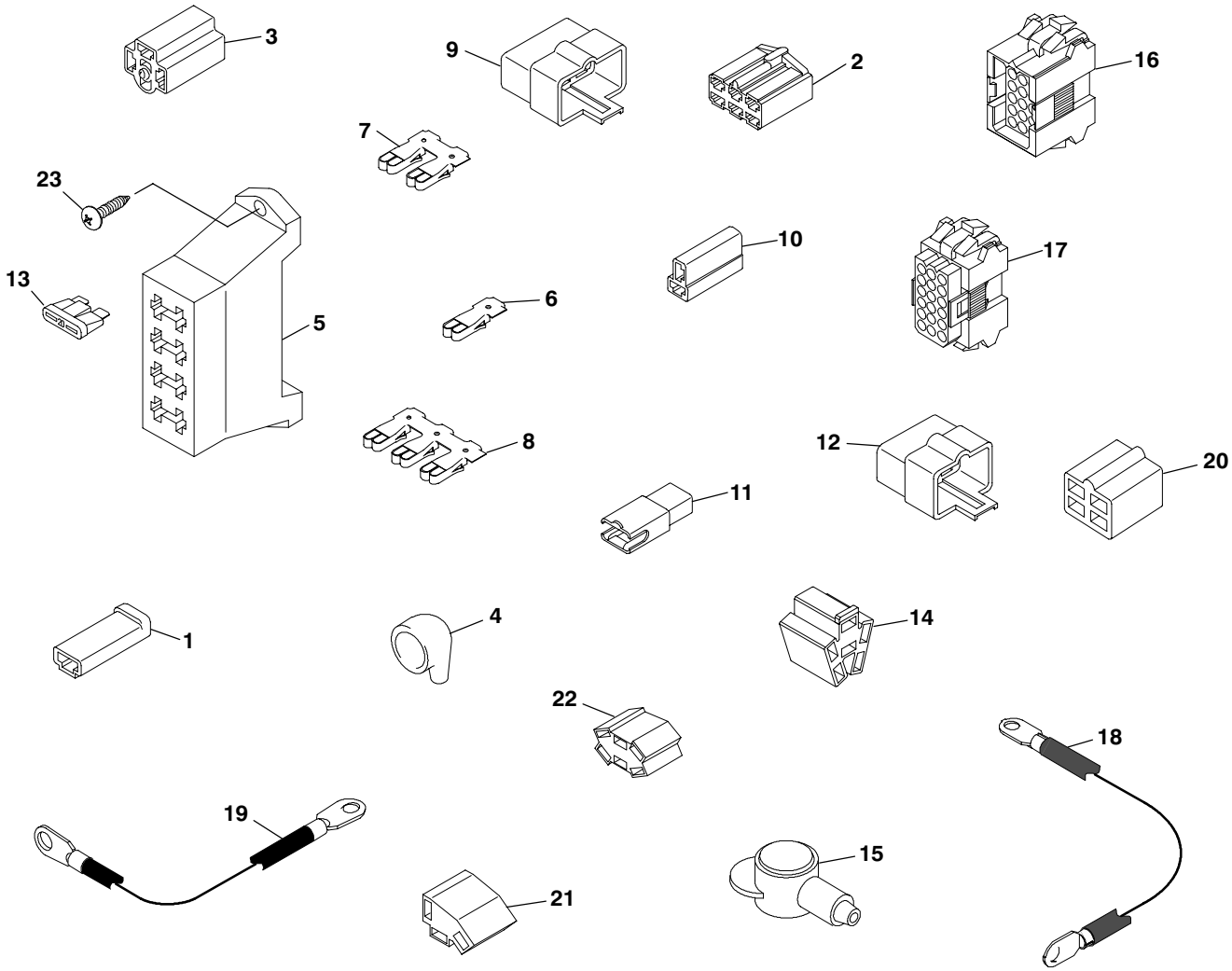
MAIN WIRE HARNESS
SUZUKI 970 SPRAYTEK

Ref No.	Part No.	Description	No. Req'd.
1	894266	Harness, main wire	1

The wiring harness is shown as a reference only. Although the actual harness resembles the illustration shown, connections, terminals and routing can change without notice.

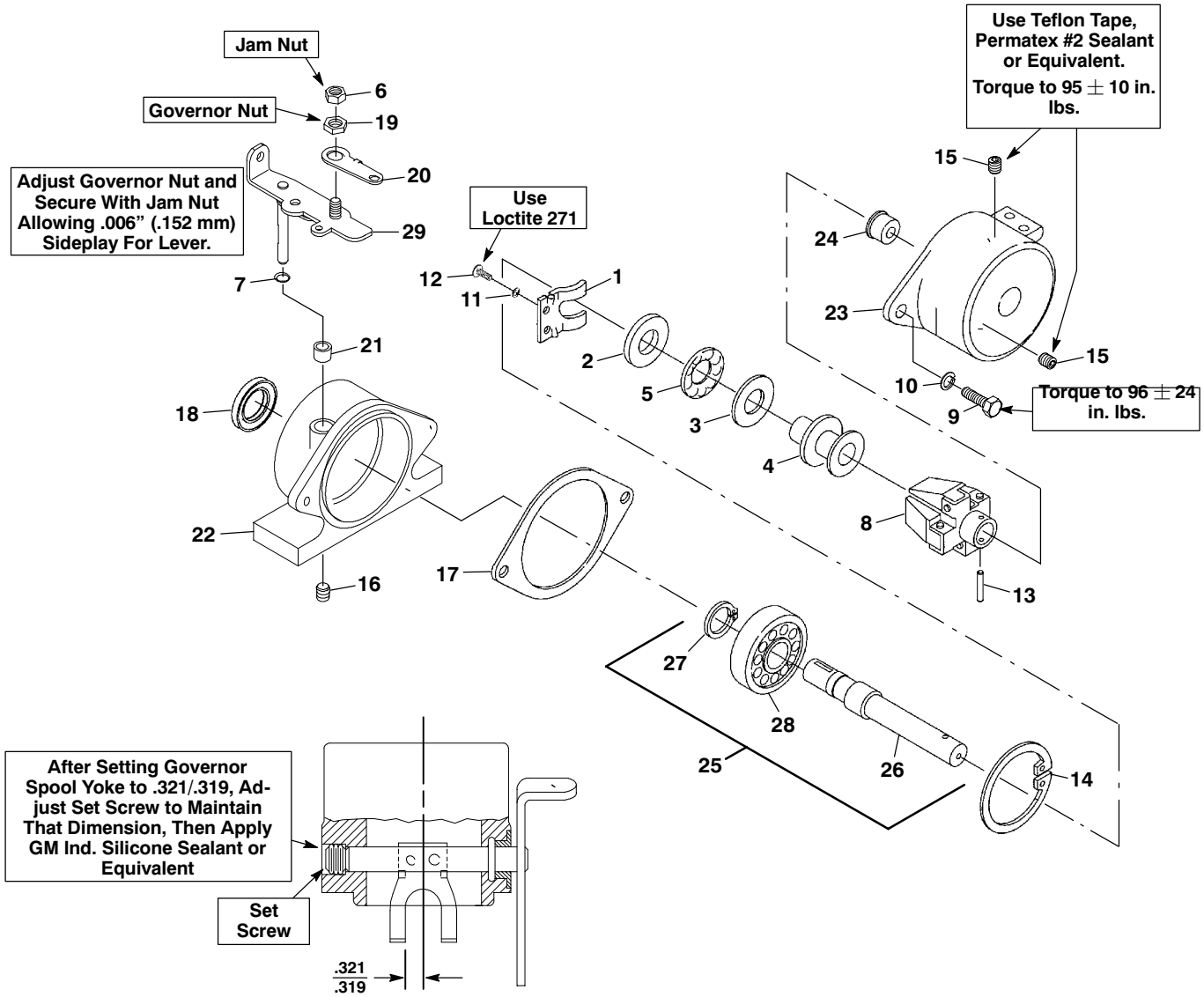


ELECTRICAL CONNECTORS



Ref. No.	Part No.	Description	No. Req'd.
1	825880	Connector, female	As Req'd
2	825877	Connector, female, 6-contact ...	1
3	825894	Connector, female, 3-contact ...	1
4	825970	Boot, terminal (solenoid)	1
5	825996	Fuseholder	1
6	825997	Terminal, fuse clip, 1-way 1 lead	4
7	825998	Terminal, fuse clip, 1-way 2 lead	6
8	825999	Terminal, fuse clip, 3-way 1 lead	2
9	825973	Connector, male, 6-contact	3
10	826005	Connector, male, 2-contact	1
11	826726	Connector, male, 1-contact	1
12	829631	Connector, female, 4-contact ...	2
13	826000	Fuse, 20 amp.	As Req'd
	833038	Fuse, 30 amp.	As Req'd
	836892	Fuse, 10 amp.	As Req'd
	842983	Fuse, 15 amp.	As Req'd
14	837296	Connector	1
15	841895	Cover, battery terminal	1
16	844013	Connector, 18-contact	1
17	843550	Connector, receptacle, 18-contact	1
18	894603	Cable, battery, red 17" (432 mm)	1
19	894602	Cable, battery, black 32" (813 mm)	1
	892811	Cable, battery, black 24" (607 mm)	1
20	829630	Connector, male, 4-contact	1
21	837301	Connector, head lamp	2
22	843598	Connector, rocker switch	1
23	800943	Screw, #10-14 x 5/8	2

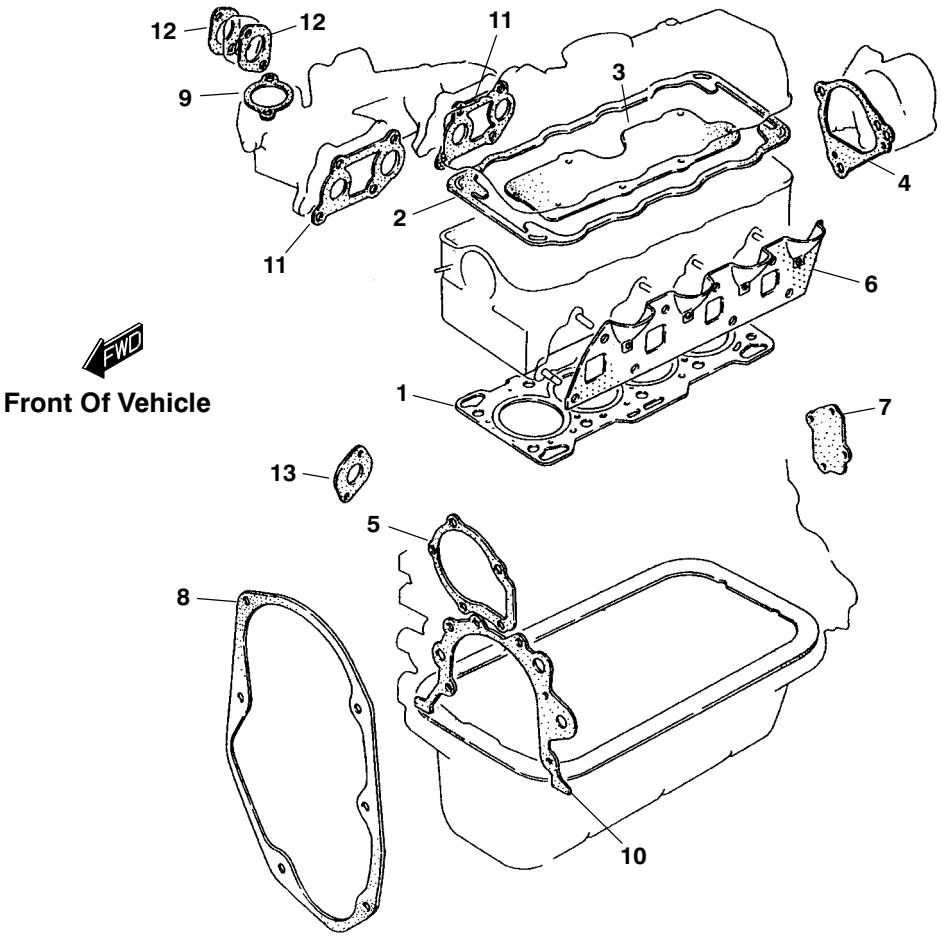
GOVERNOR



Ref. No.	Part No.	Description	No. Req'd
	894080	Governor, complete	1
1	111812	•Yoke, spool	1
2	111814	•Washer, thrust	1
3	111816	•Washer, thrust	1
4	111817	•Spool, governor	1
5	112840	•Bearing, thrust	1
6	130728	•Nut, jam, 1/4-20	1
7	158061-18	•O-ring	1
8	160410	•Carrier & weights	1
9	302288	•Screw, 1/4-20 x 1"	2
10	306396	•Lockwasher, 1/4"	2
11	306506	•Lockwasher, #6	2
12	306915	•Screw, machine, #6-32 x 5/16"	2
13	306966	•Pin, roll, 1/8" x 3/4"	1
14	548325	•Ring, retaining	1
15	800227	•Plug, 1/8-27	2
16	800558	•Screw, set, 3/8-16 x 5/16"	1
17	833056	•Gasket, governor	1
18	833102	•Seal, oil	1
19	835271	•Nut, governor arm	1
20	843537	•Bracket, governor knee	1
21	843149	•Bushing, steel	1
22	843157	•Head, governor	1
23	894471	•Reservoir, governor	1
24	833103	••Bearing, needle	1
25	888397	•Shaft, governor, complete	1
26	833066	••Shaft, governor	1
27	833104	••Ring, retaining	1
28	833345	••Bearing, ball	1
29	894067	•Lever, governor control	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

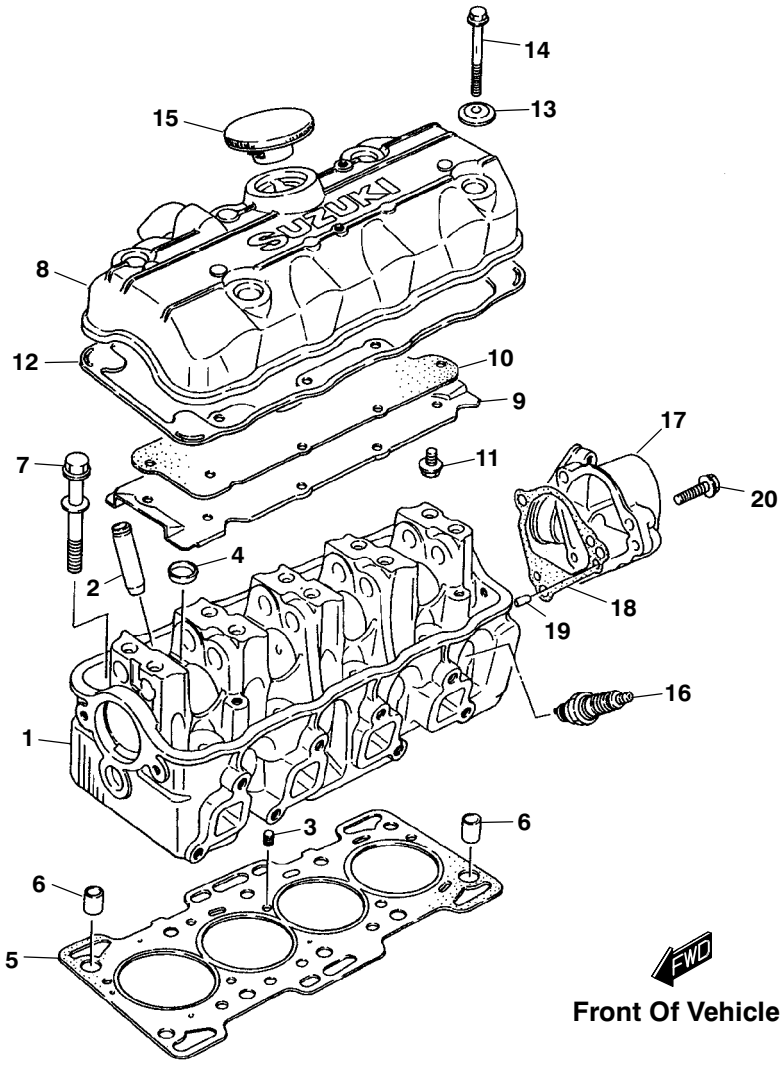
ENGINE GASKETS
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
	11401-85893	Gasket set, complete	1	7	11229-73000	•Gasket, cylndr. block plate	1
1	11141-75120	•Gasket, head	1	8	11399-73010	•Gasket, timing belt cover .	1
2	11189-73004	•Gasket, valve cover	1	9	17569-60A10	•Gasket, thermostat cap . .	1
3	11173-73001	•Gasket, breather plate . . .	1	10	16119-76G00	•Gasket, oil pump case . . .	1
4	11169-70D00	•Gasket, distributor case . .	1	11	13119-73001-H17	•Gasket, intake man. .	2
5	2701801	•Gasket, water pump	1	12	13125-80000-H17	•Gasket, carburetor . .	2
6	14140-85200	•Gasket, exhaust man. . . .	1	13	17559-73000-H17	•Gasket, water inlet . .	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

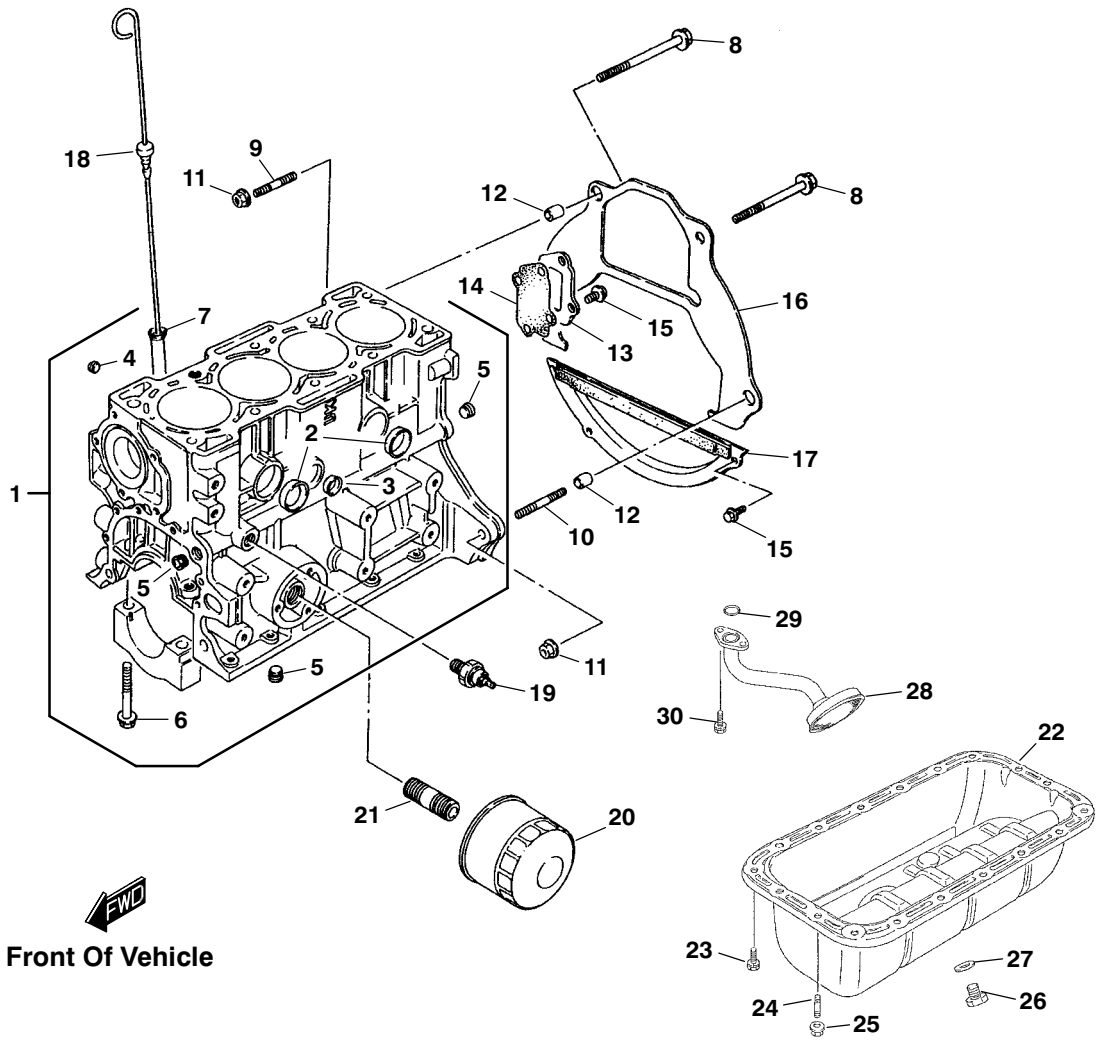
CYLINDER HEAD and COMPONENTS
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	11110-80002	Head, cylinder	1
2	11115-82000-001	•Guide, valve	8
3	4119607	•Plug, oil venturi	1
4	2701816	•Plug	5
5	11141-75120	Gasket, cylinder head	1
6	2701824	Pin	2
7	09116-10116	Bolt (10 x 87)	10
8	11170-79203	Cover, cylinder head	2
9	11172-73000	Plate, breather	1
10	11173-73001	Gasket, breather plate	1
11	2702537	Bolt	8
12	11189-73004	Gasket, head cover	1
13	11180-82010	Grommet, head cover	4
14	09103-06134	Bolt (6 x 65)	4
15	16920-86502	Cap, oil filler	1
16	09482-00123	Plug, spark W16EX-U, Denso	4
or	09482-00131	Plug, spark BP5ES, NGK	4
17	11161-79120	Case, distributor	1
18	11169-70D00	Gasket, case	1
19	2701953	Pin	2
20	09103-08153	Bolt, No. 2 (8 x 30)	3

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

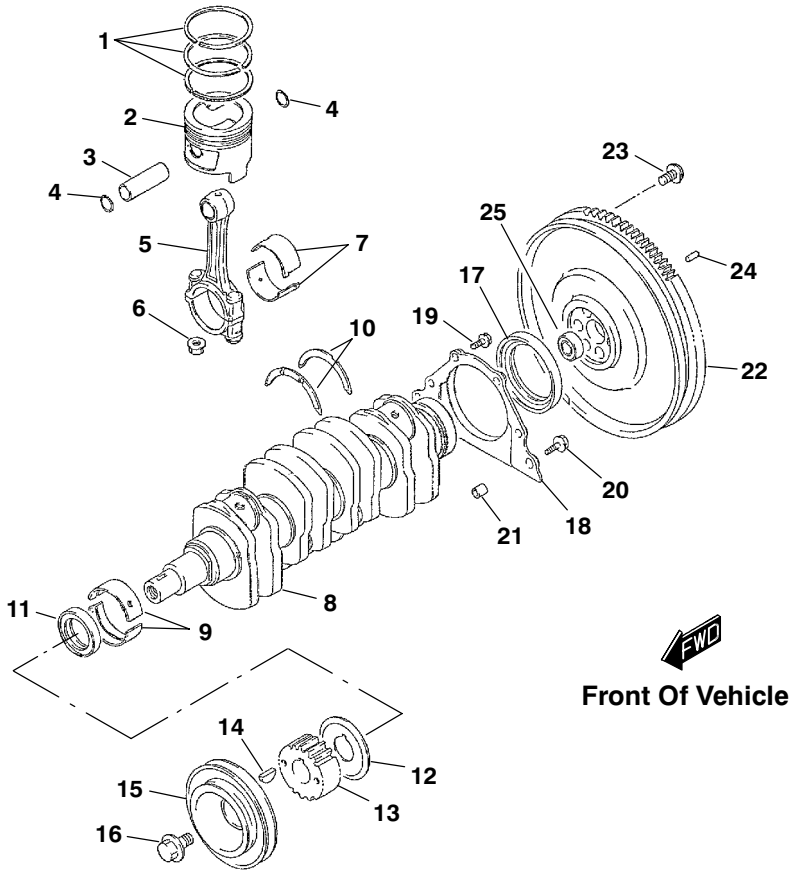
CYLINDER BLOCK, OIL PAN and GASKET
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	11200-80001	Block, cylinder	1
2	2701819	•Plug (OD:30)	3
3	09246-20006	•Plug (OD:20)	2
4	2701820	•Plug, oil gallery	1
5	2701838	•Plug, oil gallery	3
6	01550-10603	•Bolt	10
7	11219-85200	•Guide, oil level gauge	1
8	09103-10063	Bolt (10 x 115)	2
9	2702758	Stud bolt	1
10	01421-10503	Stud bolt	1
11	2702689	Nut	2
12	2702690	Pin	2
13	11221-73000	Plate, cylinder block	1
14	11229-73000	Gasket	1
15	2702537	Bolt	6
16	11311-79100	Plate, clutch hsng. upper	1
17	11320-77201	Plate, clutch hsng. lower	1
18	2701918	Gauge, oil level	1
19	2701904	Switch, oil pressure	1
20	2701908	Filter, oil	1
21	2701909	Stand, oil filter	1
22	11510-85201	Pan, oil	1
23	09117-06059	Bolt (6 x 16)	16
24	2701913	Stud bolt	2
25	2701914	Nut	2
26	09247-12101	Plug, oil drain	1
27	09168-12018	Gasket	1
28	16520-79101	Strainer, oil pump	1
29	2701920	O-ring	1
30	2701921	Bolt	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

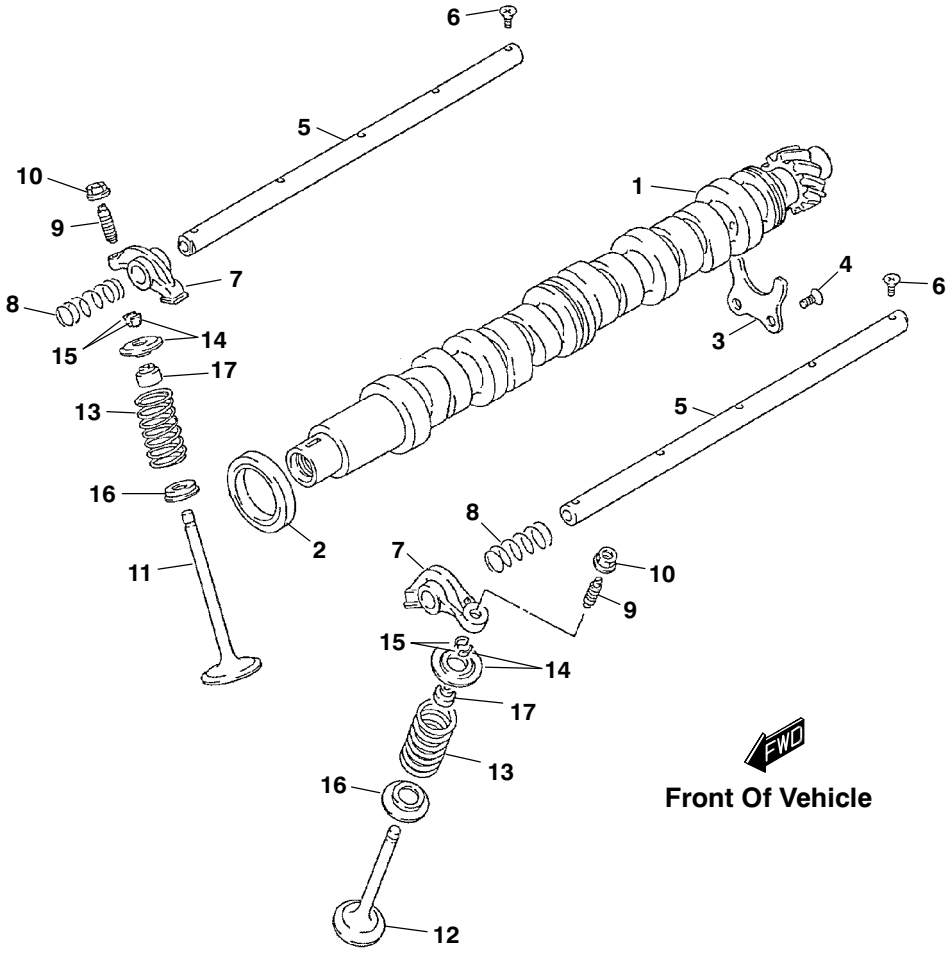
CRANKSHAFT, FLYWHEEL and PISTONS
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	12140-75112	Ring, piston (standard)	4
(1)	12140-75112-025	Ring, piston	4
(1)	12140-75112-050	Ring, piston	4
2	12111-85201-0B0	Piston (standard)	4
(2)	12111-85201-025	Piston (OS:0.25)	4
(2)	12111-85201-050	Piston (OS:0.50)	4
3	12151-29001	Pin, piston	4
4	09381-16001	Circlip	8
5	12160-73010	Rod, connecting	4
6	2701931	•Nut, connecting rod	8
7	12181-81051-0A0	Bearing (standard)	8
(7)	12181-81051-025	Bearing, cnctng. rod	8
(7)	12181-81051-050	Bearing, cnctng. rod	8
(7)	12181-81051-075	Bearing, cnctng. rod	8
(7)	12181-81051-100	Bearing, cnctng. rod	8
8	12221-75104	Crankshaft	1
9	12300-73812-0A0	Bearing set, crnkshft.	1
(9)	12300-73812-025	Bearing set, crnkshft.	1
(9)	12300-73812-050	Bearing set, crnkshft.	1
(9)	12300-73812-075	Bearing set, crnkshft.	1
(9)	12300-73812-100	Bearing set, crnkshft.	1
10	12300-73830	Bearing set, crank thrust	1
(10)	12300-73830-012	Bearing set, thrust	1
(10)	12300-73830-025	Bearing set, thrust	1
11	2701939	Seal, front	1
12	12635-78401	Guide, timing belt	1
13	12631-78401	Pulley, timing belt	1
14	2701943	Key	1
15	12611-66C00	Pulley, crank	1
16	2701944	Bolt	1
17	2701945	Seal, rear main	1
18	2701946	Housing, oil seal	1
19	2701834	Bolt	4
20	2701948	Bolt	2
21	2701949	Pin	2
22	12620-85301	Flywheel	1
23	2701951	Bolt (10 x 17)	6
24	04421-06129	Pin	1
25	2701952	Bearing, input shaft	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

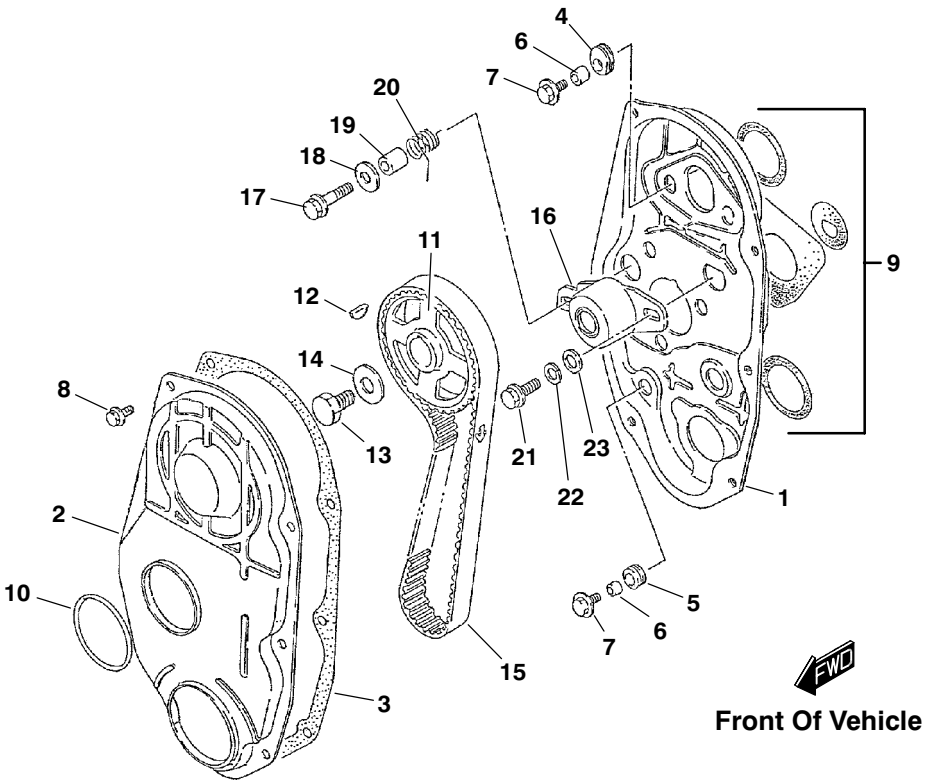
CAMSHAFT and COMPONENTS
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	12710-77314	Camshaft	1
2	09283-32040	Seal, camshaft	1
3	12749-73002	Plate, cam shaft thrust	1
4	02122-06123	Screw	2
5	12860-73004	Shaft, valve rocker	2
6	2702517	Screw	10
7	12841-77300	Arm, valve rocker	8
8	12891-51G00	Spring, rocker arm	8
9	12848-73010	Screw, valve adjusting	8
10	09159-07002	Nut	8
11	12911-78101	Valve, inlet	4
12	12915-84010	Valve, exhaust	4
13	12921-73002	Spring, valve	8
14	12900-82810	Retainer, valve spring	8
15	12932-82000	•Cotter, valve	16
16	12933-73000	Seat, valve spring	8
17	09289-07007	Seal, oil	8

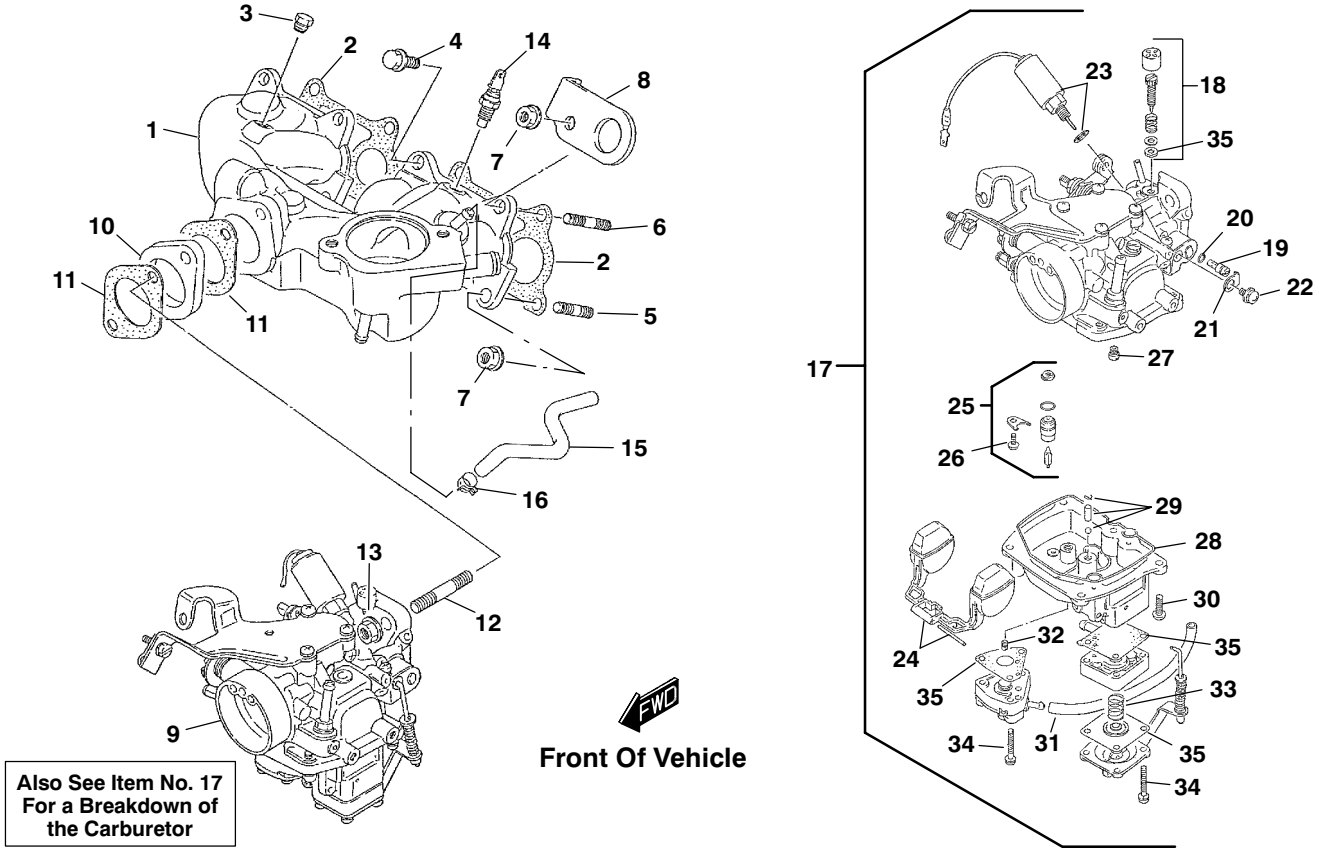
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

TIMING BELT and TIMING COVER
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	11360-78100	Cover, inside	1
2	11391-78113	Cover, outside	1
3	11399-73010	Gasket, cover	1
4	11398-73000	Grommet	2
5	2701975	Grommet	2
6	2701976	Spacer (6 x 10 x 17)	4
7	09136-06139	Bolt (6 x 16)	4
8	2702537	Bolt	6
9	11480-78110	Seal set, inside cover	1
10	11484-73000	Grommet, outside	1
11	12741-78403	Pulley, timing belt	1
12	2701943	Key	1
13	01500-12253	Bolt	1
14	09160-12094	Washer (12.5 x 32 x 4.5)	1
15	12761-78400	Belt, timing	1
16	12810-53A00	Tensioner, timing belt	1
17	2702659	Bolt	1
18	2702647	Washer (8.5 x 26 x 1.6)	1
19	09180-08111	Spacer (8.1 x 16 x 17)	1
20	12821-78100	Spring, tensioner	1
21	09103-08152	Bolt (8 x 25)	1
22	2702656	Lockwasher	1
23	09160-08126	Washer (8.5 x 20 x2.6)	1

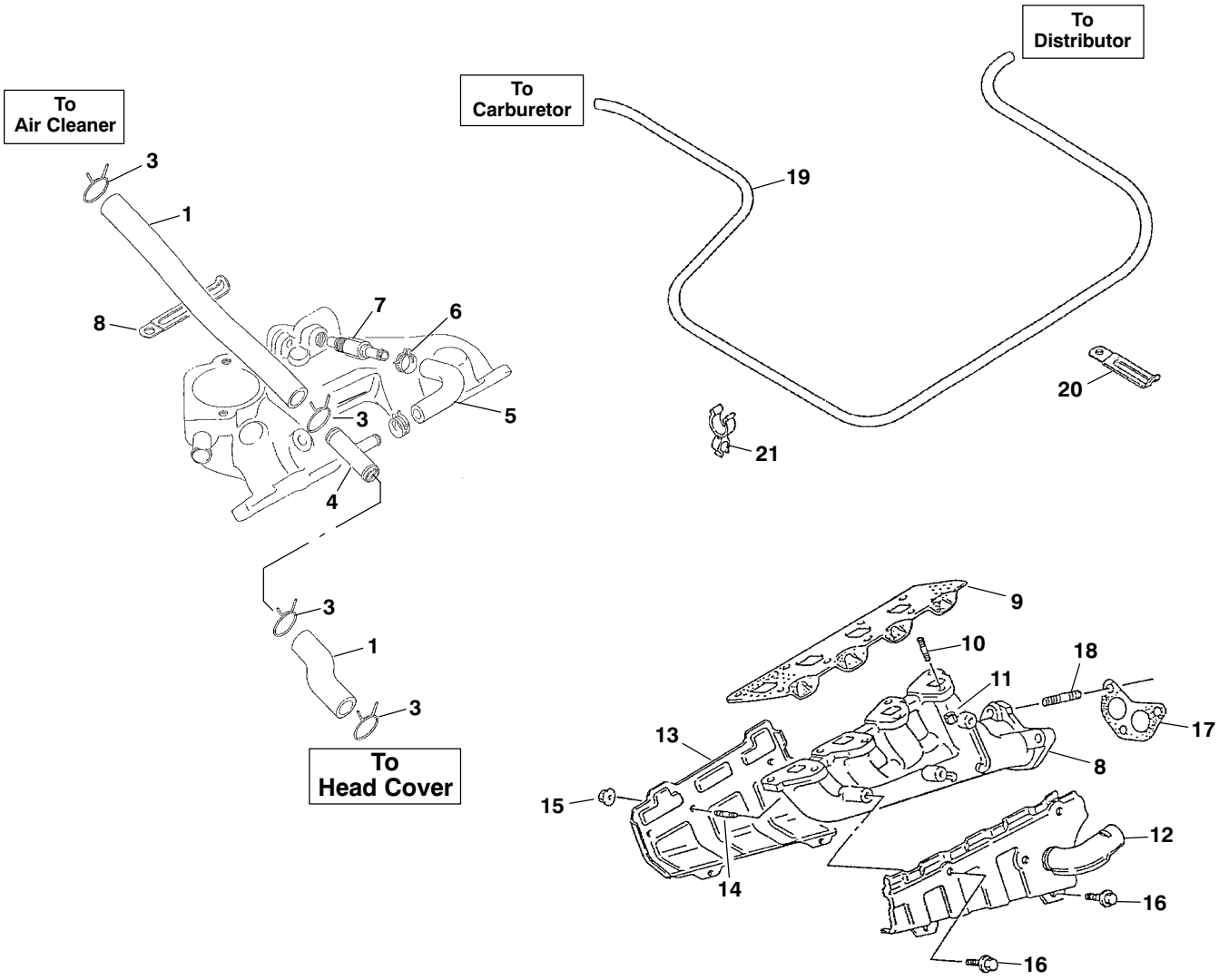
CARBURETOR and INTAKE MANIFOLD
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	13110-85X57	Manifold, intake	1
2	13119-73001-H17	Gasket, intake mnfld.	2
3	09246-04005	Plug, boost	1
4	2701827	Bolt	3
5	01411-08203	Stud bolt	4
6	01411-08253	Stud bolt	1
7	2703002	Nut	5
8	2702759	Hook, engine	1
9	2700621	Carburetor, complete	1
10	13121-80000	Insulator, carburetor	1
11	13125-80000-H17	Gasket, carburetor	2
12	09108-08169	Stud bolt	2
13	2703002	Nut	2
14	34850-50A00	Gauge, water temp.	1
15	51030-85051	Hose, brake vacuum No. 3	1
16	2702433	Clamp	1
17	2700621	Carburetor, complete	1
18	13270-855T0	•Screw set, idle adjust	1
19	09492-47006	•Jet, pilot (#47.5)	1
20	13278-45010	•O-ring	1
21	13398-78110	•Plate	1
22	02112-75103	•Screw	1
23	13260-797T0	•Solenoid set	1
24	13250-852T0	•Float set	1
25	13370-60CT0	•Valve set, needle	1
26	02112-04087	•Screw	1
27	09491-21024	•Jet, main (#108.8)	1
28	13251-79110	•O-ring	1
29	13240-852T0	•Weight set, pump	1
30	02142-05163	•Screw	5
31	09355-35754	•Hose	As Req'd.
32	09492-65005	•Jet, enrichment (#65)	1
33	13494-78420	•Spring	1
34	02112-34253	•Screw	1
35	13380-793T0	•Gasket set	1

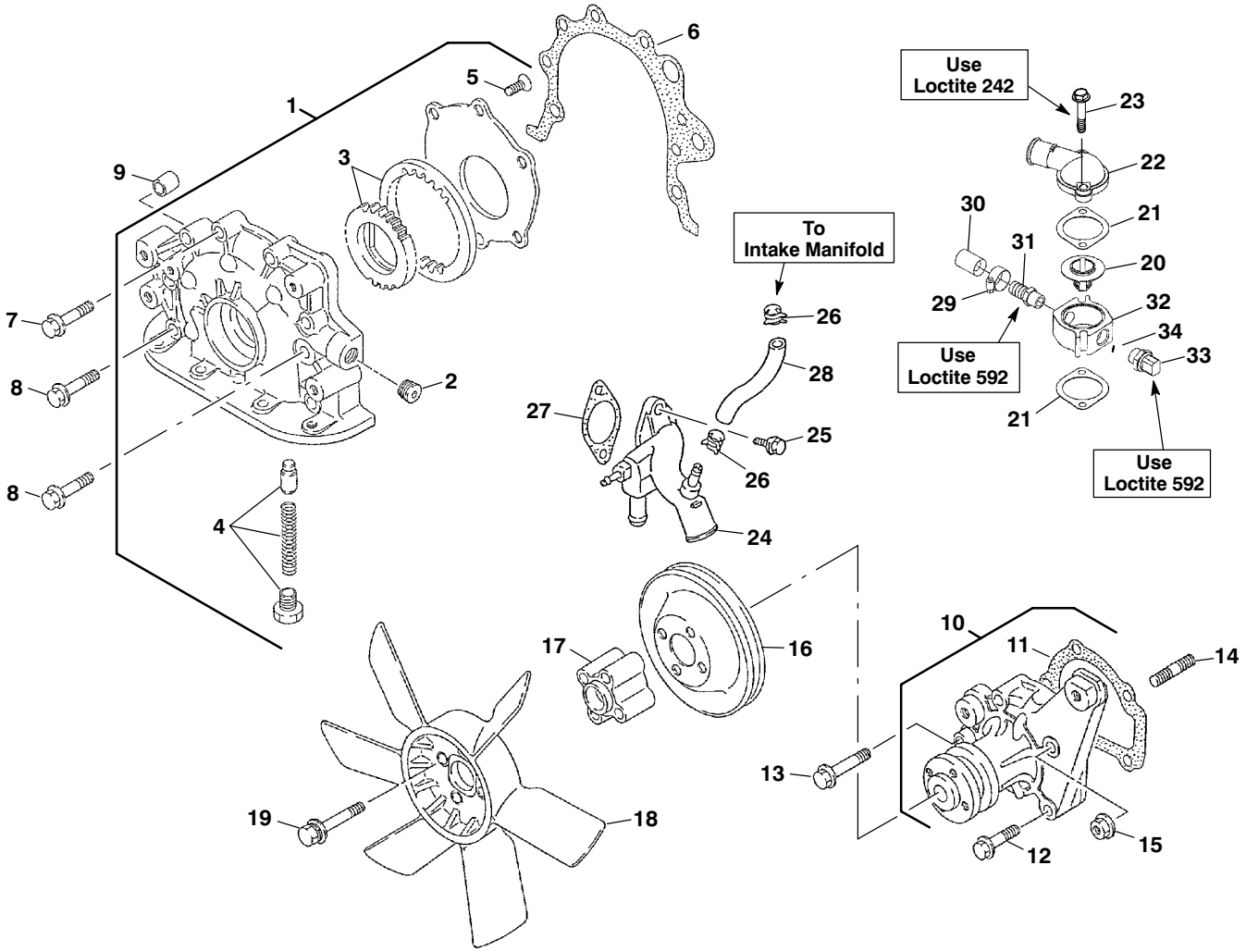
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

PCV VALVE, EMISSIONS and EXHAUST MANIFOLD
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	09355-13207-600	Hose	As Req'd.
2	09401-20301	Clip	4
3	09367-14002	Union, 3-way	1
4	11193-85000	Hose, PCV	1
5	2702491	Clip	2
6	18118-80010	Valve, PCV	1
7	09404-08420	Clamp, breather hose	1
8	14111-85210	Manifold, exhaust	1
9	14140-85200	Gasket, exhaust manifold	1
10	01411-08253	Stud bolt	8
11	2702494	Nut	8
12	14120-85220	Cover, upper	1
13	14125-85201	Cover, lower	1
14	01411-06123	Stud bolt	3
15	2702498	Nut	3
16	09103-06168	Bolt (6 x 10)	5
17	14181-85200	Gasket, exhaust pipe	1
18	01411-10253	Stud bolt	3
19	2702544	Hose	As Req'd.
20	2702951	Clamp	1
21	09408-00060	Clamp	1

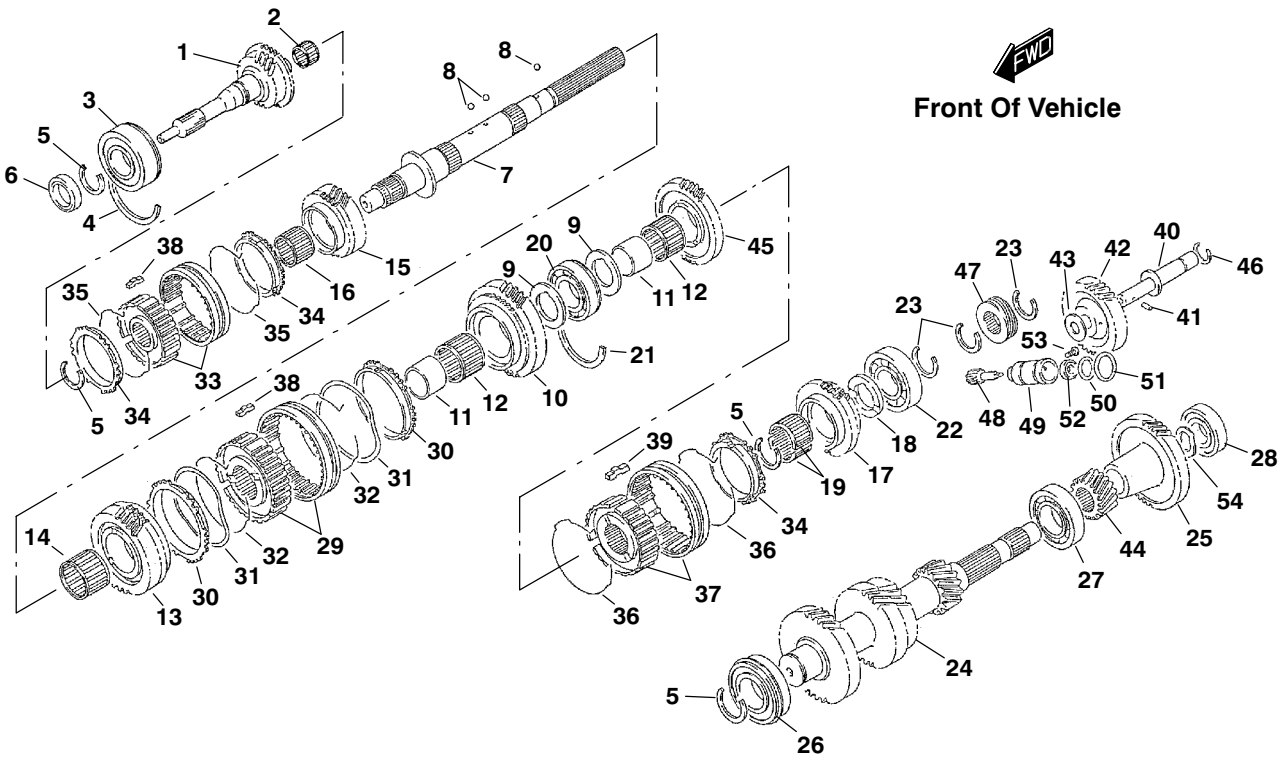
OIL PUMP and WATER PUMP
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	16100-73004	Pump, oil	1
2	09246-06002	•Plug, oil gallery	1
3	16130-73000	•Rotor set, oil pump	1
4	16150-73000	•Valve set, oil pump relief	1
5	02122-06123	•Screw	6
6	2701800	Gasket, oil pump case	1
7	2702519	Bolt	1
8	2702520	Bolt	7
9	2701949	Pin	2
10	17400-78821	Pump set, water	1
11	2701801	•Gasket, water pump	1
12	2702519	Bolt	2
13	01550-06403	Bolt	1
14	2702523	Stud bolt	2
15	2701914	Nut	2
16	17511-73001	Pulley, water pump	1
17	17131-80000	Hub, cooling fan	1
18	17110-7730	Fan, cooling	1
19	01580-06503	Bolt	4
20	17600-85831	Thermostat, water	1
21	843856	Gasket, fan switch housing	2
22	17561-73000	Cap, thermostat	1
23	452393	Bolt, M8-1.25 x 60 (8.8)	2
24	17550-77X50	Pipe, water inlet	1
25	2701834	Bolt	2
26	09401-11415	Clip	2
27	17559-73000-H17	Gasket, inlet pipe	1
28	09352-70121-00B	Hose, water bypass	1
29	832033	Clamp	1
30	833715	Plug	1
31	833858	Fitting, hose	1
32	843738	Housing, fan sender	1
33	17680-50F70	Switch, fan	1
34	17689-50F00	•O-ring	1

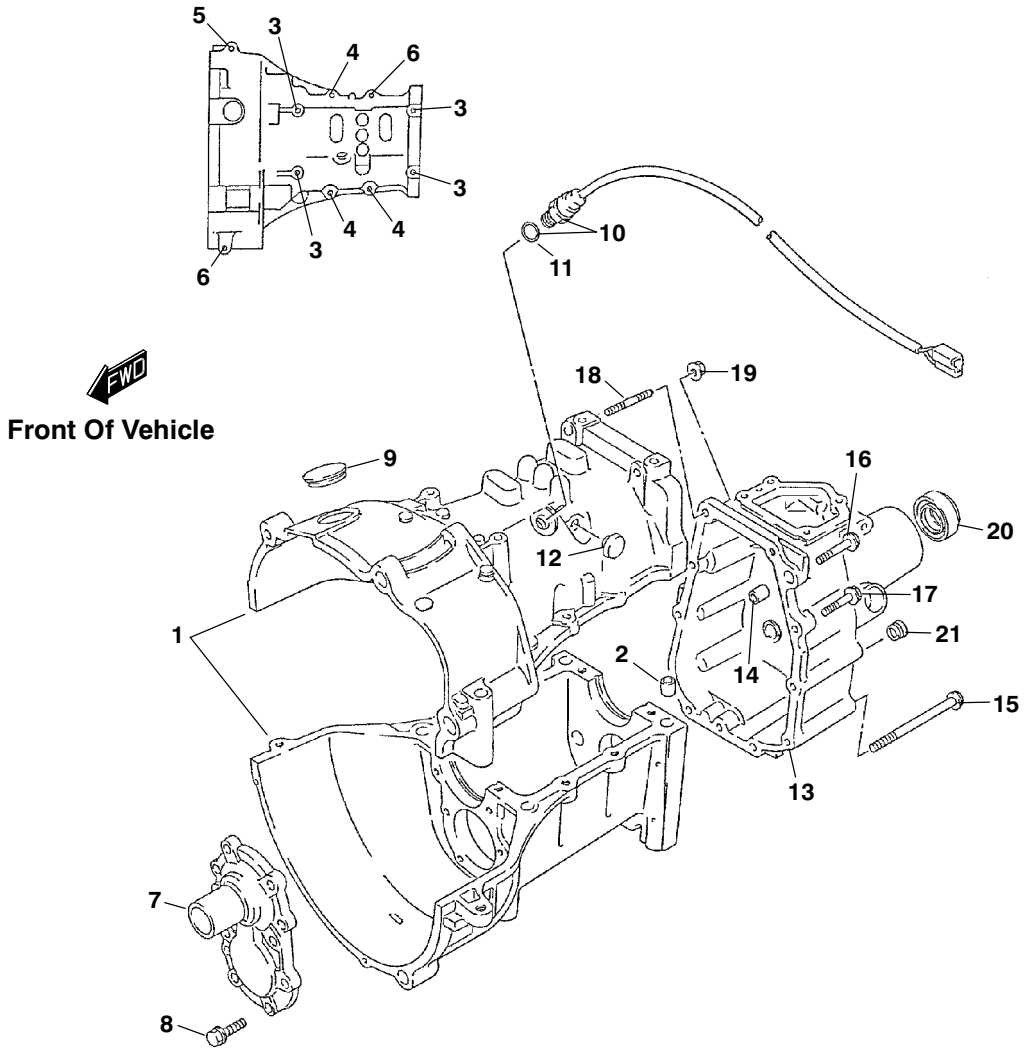
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

INPUT SHAFT and GEARS (MANUAL TRANSMISSION)
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	24110-80410	Shaft, input	1
2	2702561	Bearing	1
3	09262-28005	Bearing	1
4	09390-68002	C-ring	1
5	09380-28007	Circlip	4
6	09283-25088	Seal,oil	1
7	24121-85252	Shaft, main	1
8	06111-06003	Ball	3
9	09166-30007	Washer	2
10	24211-83011	Gear, main shaft, low	1
11	09300-30003	Bushing	2
12	09263-35015	Bearing	2
13	24220-60A01	Gear, main shaft 2nd	1
14	09263-35015	Bearing	1
15	24230-83001	Gear, main shaft 3rd	1
16	09263-30031	Bearing	1
17	24250-83020	Gear, main shaft 5th	1
18	24255-60A00	Washer	1
19	24801-60810	Bearing	1
20	09262-30086	Bearing	1
21	09390-62010	C-ring	1
22	09262-25073	Bearing	1
23	2702559	Circlip	3
24	24131-83002	Shaft, counter	1
25	24351-60A10	Gear, counter shaft 5th	1
26	09262-28019	Bearing, front	1
27	09262-28020	Bearing, center	1
28	09262-20073	Bearing, rear	1
29	24400-83000	Hub, synchronizer low	1
30	24431-83001	Ring, synchronizer low	2
31	24436-83000	Spring, low/2nd	2
32	24441-85F41	Spring, low	2
33	24410-83000	Hub, synchronizer high	1
34	24432-83001	Ring, synchronizer high	3
35	24442-81A20	Spring, high	2
36	2703581	Spring, 5th speed	2
37	24420-83000	Hub, reverse drive	1
38	24471-60A00	Key	6
39	24473-70D10	Key	3
40	24551-83010	Shaft, reverse idle gear	1
41	09261-06003	Pin	1
42	24560-83001	Gear, reverse idle (NT:33)	1
43	09166-16014	Washer	1
44	24671-83000	Gear, countershaft (rev.)	1
45	24681-83000	Gear, mainshaft (rev.)	1
46	2702586	Circlip	1
47	26121-85202	Gear, speedometer drive	1
48	26131-85201	Gear, speedometer driven	1
49	29431-85400	Case, speedometer gear	1
50	09280-19001	O-ring	1
51	09280-21014	O-ring	1
52	09282-08001	Seal, oil	1
53	09128-06032	Bolt	1
54	09164-20008	Washer	1

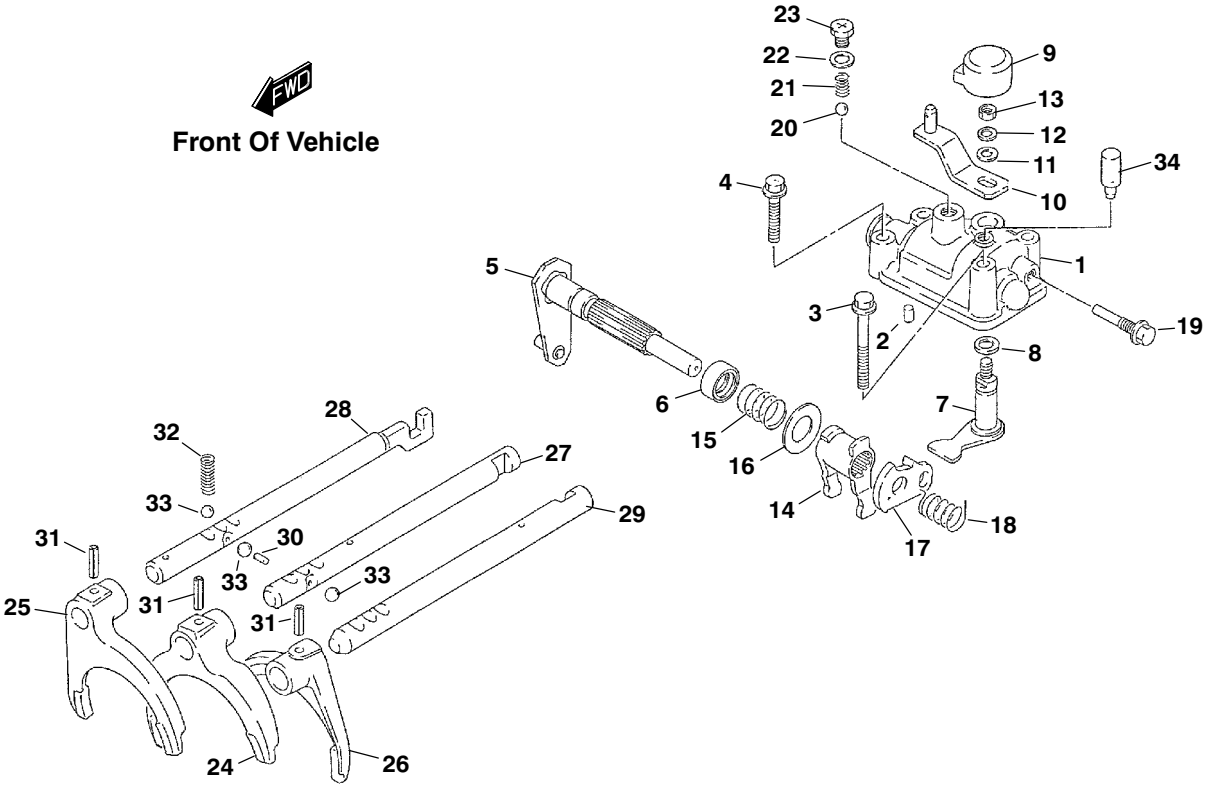
TRANSMISSION CASE
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	24700-85200	Case, transmission	1
2	2702690	•Pin	2
3	09103-08131	•Bolt, No. 1 (8 x 120)	4
4	2702470	•Bolt, No. 2	3
5	2702659	•Bolt, No. 3	1
6	2702471	•Bolt, No. 4	2
7	24741-83001	Retainer, input shaft brng.	1
8	09103-08152	Bolt (8 x 25)	8
9	09250-30003	Cap, inspection timing	1
10	37610-80023	Switch, back-up lamp	1
11	09280-11002	•O-ring	1
12	09250-10006	Plug, locating	1
13	24770-85252	Case, extension	1
14	2702690	Pin	2
15	09103-08132	Bolt, No. 1 (8 x 100)	3
16	2702659	Bolt, No. 2	1
17	01550-08353	Bolt, No. 3	5
18	01421-08303	Stud bolt	1
19	2703002	Nut	1
20	24780-83010	Seal, extension case	1
21	2702684	Plug, oil filler	2

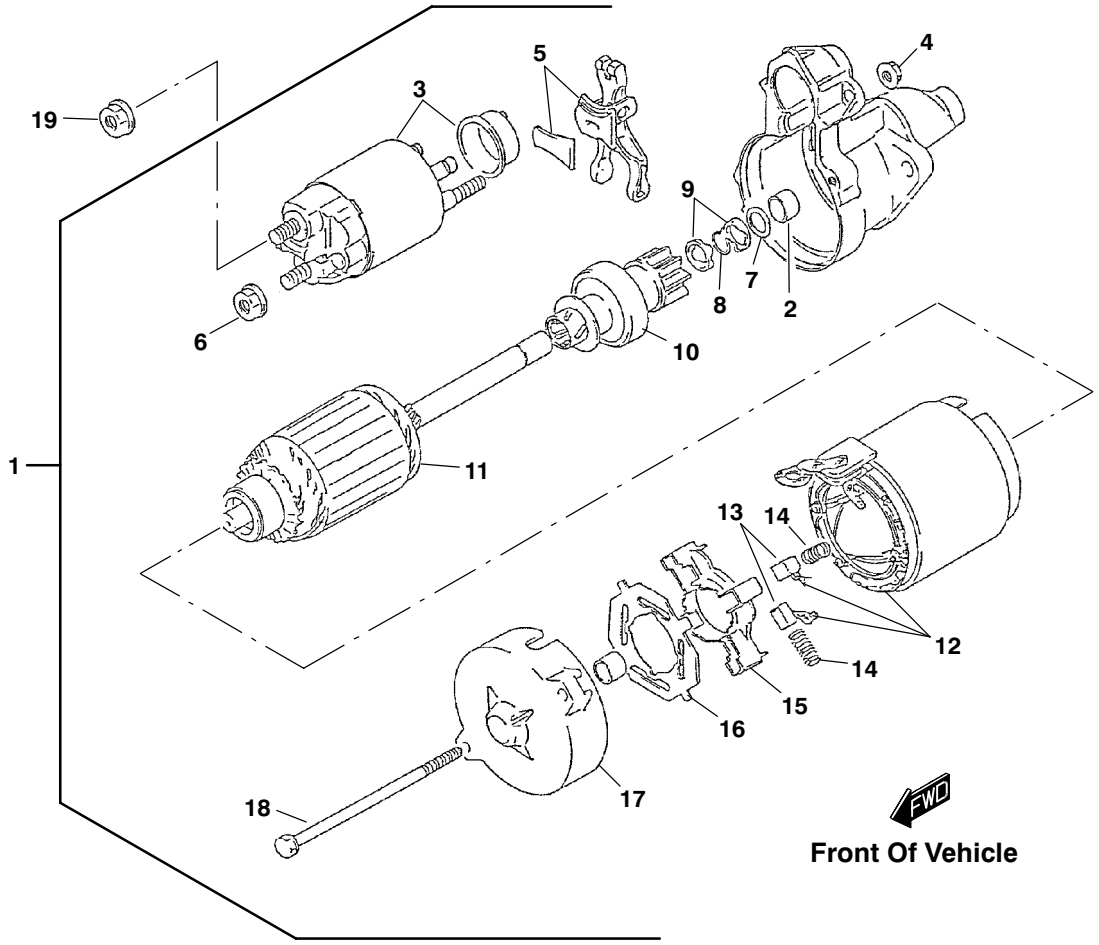
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

GEAR SHIFT FORK
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	25121-85051	Case, gear shift lever	1
2	2701953	Pin	1
3	01550-08553	Bolt	1
4	2702659	Bolt	3
5	25520-85203	Shaft, gear shift lever	1
6	09284-17004	Seal, oil	1
7	25530-79501	Shaft, gear select	1
8	09286-09001	Seal. oil	1
9	25536-84200	Boot, gear select shaft	1
10	25535-85412	Arm, gear select	1
11	09162-08008	Washer	1
12	2702883	Washer	1
13	2702494	Nut	1
14	25541-85201	Lever, gear select	1
15	25576-70D00	Spring	1
16	09160-17035	Washer (17 x 32 x 1.2)	1
17	25545-85055	Dog, reverse shift limit	1
18	25546-60C01	Spring	1
19	09135-08005	Bolt	1
20	2702630	Ball	1
21	25547-70D00	Spring	1
22	09168-10007	Gasket	1
23	09128-10002	Bolt (10 x 9)	1
24	25211-85201	Fork, low speed gear shift	1
25	25221-85202	Fork, high speed gear shift	1
26	25221-83002	Fork, reverse gear shift	1
27	25411-85201	Shaft, low speed fork	1
28	25420-85201	Shaft, high speed fork	1
29	25451-85261	Shaft, reverse fork	1
30	09261-03017	Roller	1
31	09205-05012	Spring, pin	3
32	25415-83000	Spring	3
33	06111-12004	Ball	5
34	24821-09001	Plug, breather	1

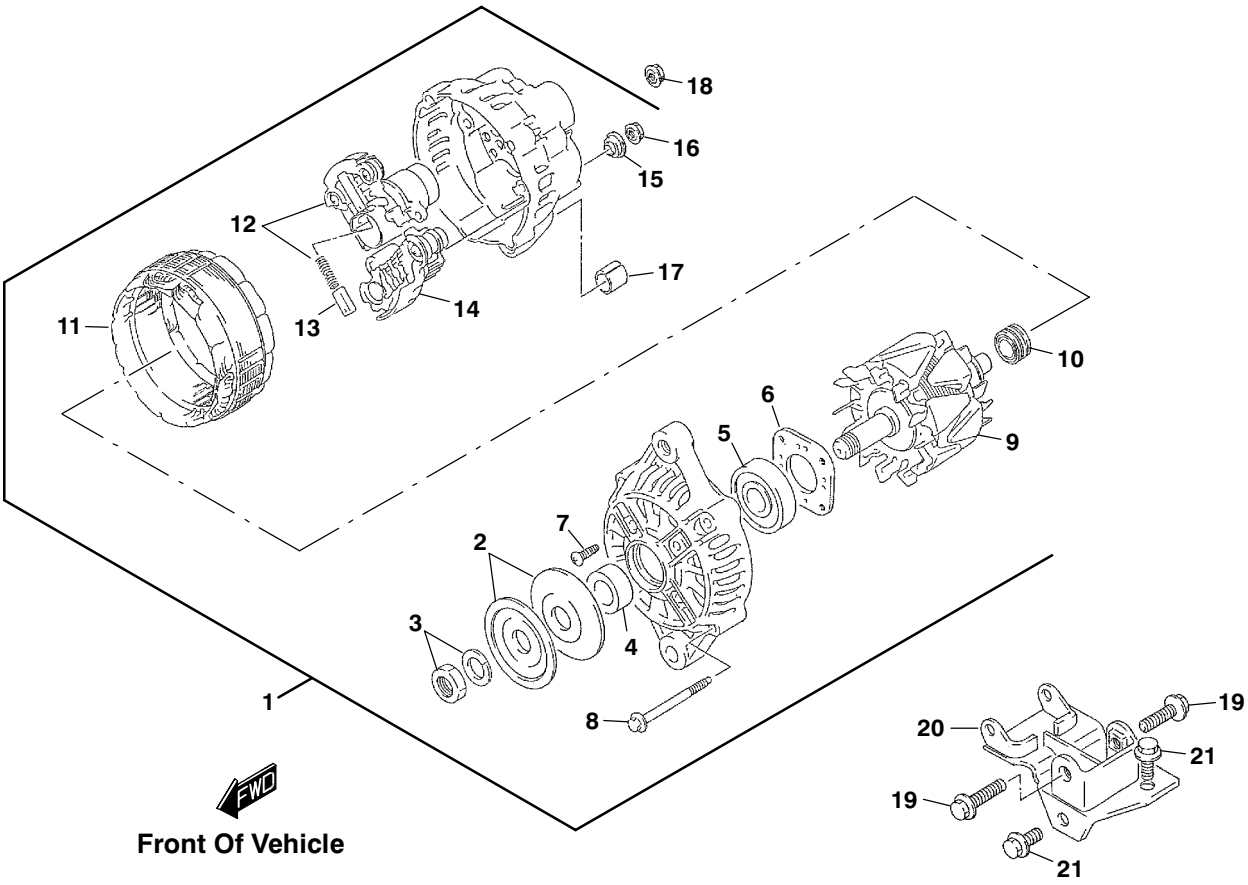
STARTER MOTOR
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	31100-79X50	Motor, starting	1
2	31152-51A10	•Bushing	1
3	31220-51A10	•Switch assembly	1
4	2701914	•Nut	2
5	31191-85020	•Lever, pinion drive	1
6	2703002	•Nut, switch	2
7	31153-51A10	•Washer	1
8	31312-51A10	•Ring, snap	1
9	31310-51A10	•Nut, pinion stop	2
10	31320-51A10	•Clutch assembly	1
11	31311-51A10	•Armature	1
12	31110-52A50	•Yoke assembly	1
13	31131-51A10	••Brush	4
14	31135-51A10	•Spring, brush	4
15	31173-51A10	•Holder, brush	1
16	31175-51A10	•Insulator	1
17	31172-51A10	•Bushing	1
18	31281-51A10	•Bolt	2
19	2703002	Nut	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

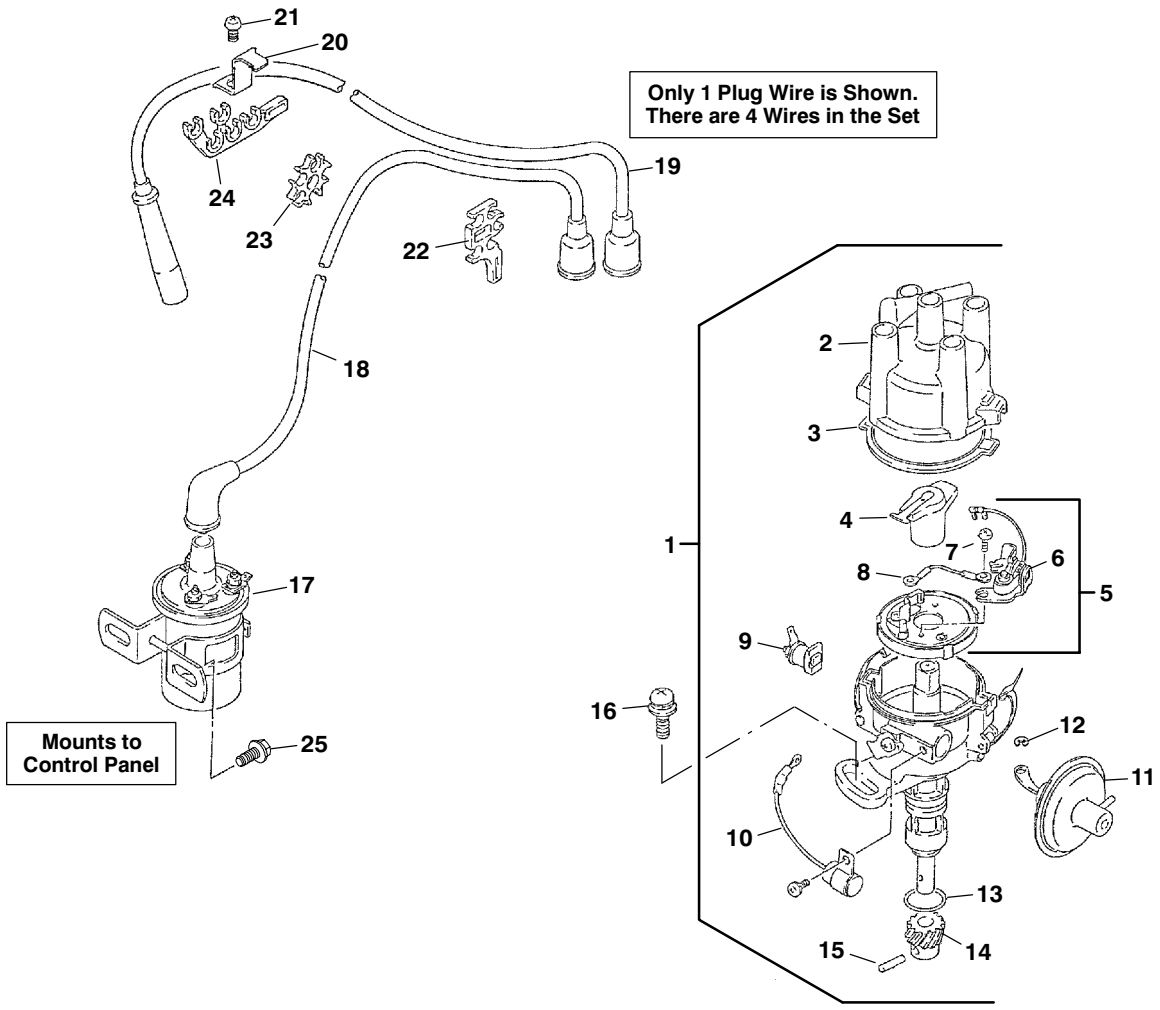
ALTERNATOR
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	31400-60C11	Generator (alternator)	1
2	31771-82C20	•Pulley	2
3	4119618	•Nut	1
4	31792-51F10	•Spacer	1
5	31582-50F20	•Bearing	1
6	31585-60A10	•Retainer, bearing	1
7	31586-60A10	•Screw	1
8	4119617	•Screw kit	1
9	31710-82C20	•Rotor	1
10	4119615	••Bearing, rear	1
11	31410-85320	•Stator	1
12	32500-60C11	•Regulator	1
13	4119616	••Brush set	2
14	31621-70D11	•Rectifier	1
15	31514-82630	•Insulator	1
16	2701914	•Nut	1
17	31616-82C20	•Bushing	1
18	2701914	Nut	1
19	2702470	Bolt	2
20	95110-66C00	Bracket	1
21	2702475	Bolt	3

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

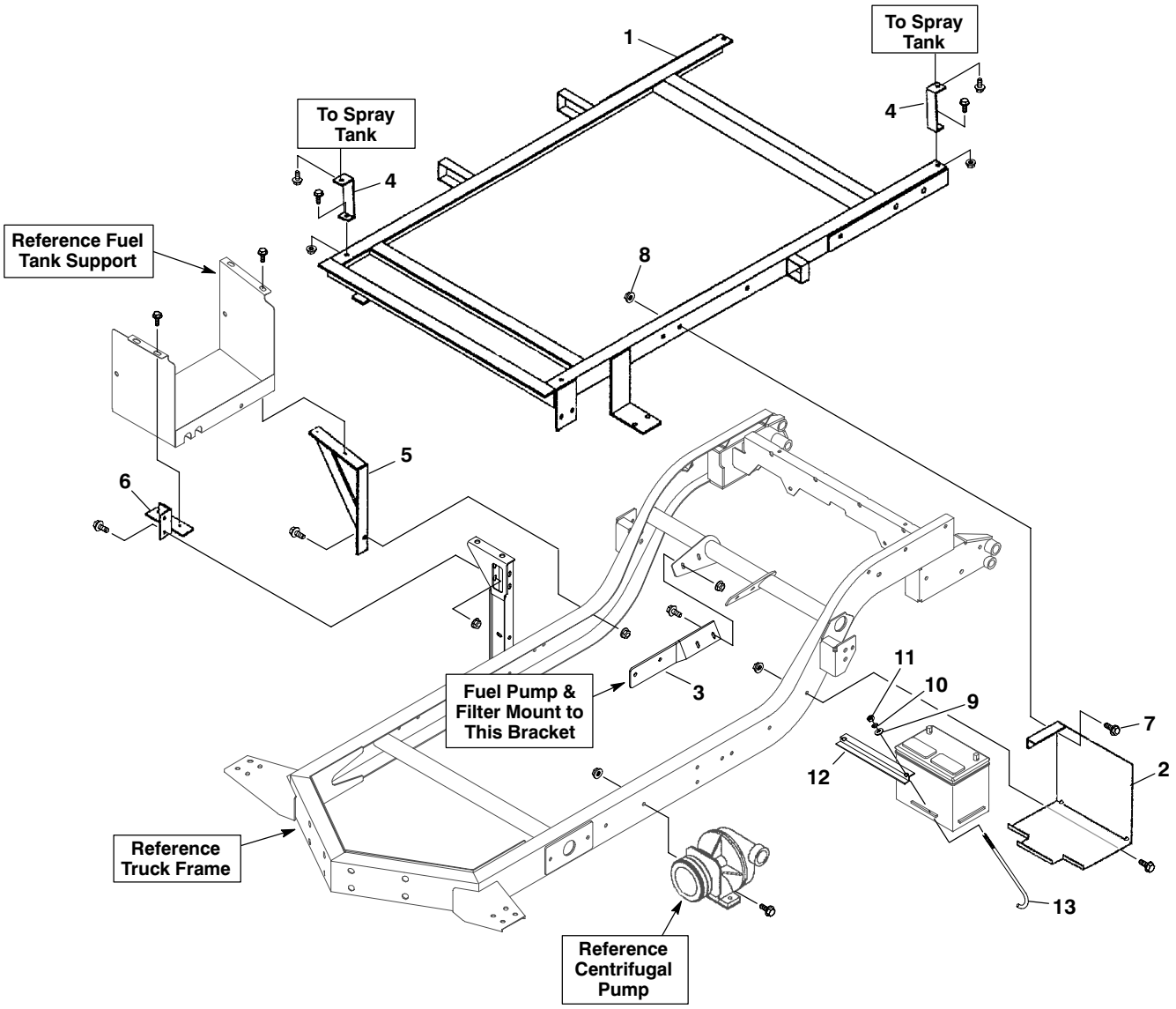
DISTRIBUTOR
SUZUKI 970 SPRAYTEK



Ref. No.	Part No.	Description	No. Req'd
1	33100-85750	Distributor	1
2	33321-60A10	•Cap, distributor	1
3	33324-79610	•Seal, cap	1
4	33310-82010	•Rotor	1
5	33102-75110	•Breaker assembly	1
6	33140-74010	••Point assembly	1
7	33151-52011	••Screw, point	2
8	33341-76410	••Wire, read	1
9	33210-73010	•Terminal assembly	1
10	33261-77090	•Condenser	1
11	33230-85730	•Controller, vacuum	1
12	33239-76410	•E-ring	1
13	33278-85310	•O-ring	1
14	33267-79610	•Gear	1
15	33268-72010	•Pin	1
16	09138-08003	Screw (8 x 30)	1
17	33410-85010	Coil, ignition	1
18	33710-85051	Cord, high tension No. 1 (coil wire)	1
19	33705-85220	Cord set, high tension (spark plug wire set)	1
20	33881-75100	Bracket, cord clamp	1
21	02112-06083	Screw	1
22	33881-85210	Clamp, distributor side	1
23	33882-85210	Spacer, cord	1
24	33883-85210	Clamp, head	1
25	800934	Screw, M6-1.00 x 16 (10.9)	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

SPRAYER FRAME
SUZUKI 970 SPRAYER



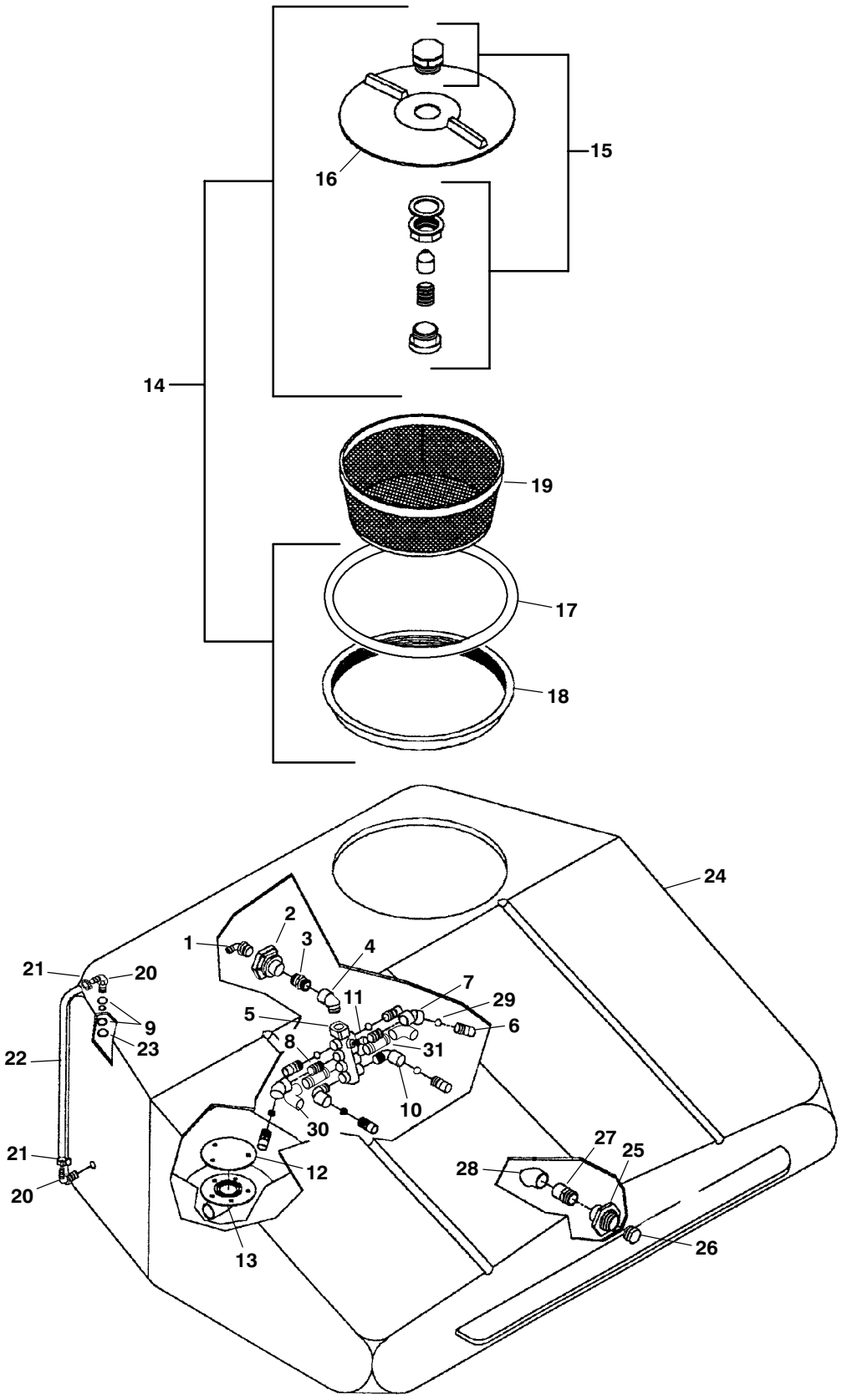
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	10-309	Frame, 300 gallon tank	1	8	450453	Nut, M8-1.25 (10.9)	2
2	11-554	Box, battery	1	9	103867	Washer, 5/16	2
3	11-555	Bracket, fuel pump	1	10	306325	Lockwasher, 5/16	2
4	11-556	Strap, tank	4	11	306932	Nut, 5/16-18	2
5	11-547	Bracket, fuel tank support	1	12	11-544	Hold down, battery	1
6	11-548	Bracket, fuel tank mount	1	13	11-543	J-hook, battery	2
7	452389	Screw, M8-1.25 x 25 (8.8)	3				

All SDI Sprayer parts can be obtained directly from SDI

Phone: (559) SDI-5555

or Fax: (559) SDI-5591

SDI DS-300 SPRAY TANK
SUZUKI 970 SPRAYER



SDI DS-300 SPRAY TANK
SUZUKI 970 SPRAYER

Ref. No.	Part No.	Description	No. Req'd
1	52-113	Adapter, elbow (3/4" mpt x 1/2" hb)	2
2	16-115	Fitting, tank (3/4" dfpt)	1
3	53-909	Nipple, close (3/4" npt)	1
4	53-814	Elbow, street (3/4" x 45°)	1
5	16-087	Manifold, agitation	1
6	16-050	Nozzle, jet	8
7	53-818	Elbow (1/2" fpt x 45°)	2
8	53-901	Nipple, close (1/2" npt)	2
9	55-050	Gasket, 3/4 rubber	4
10	53-812	Elbow (1/2" npt x 90°)	2
11	53-882	Plug (1/4" npt)	1
12	11-101	Baffle, vortex	1
13	17-132	Flange, suction (1 1/4" hb)	1
14	15-041	Lid assembly	1
15	15-056	•Valve, check vented	1
16	15-053	•Lid, 16" threaded	1
17	15-055	•Gasket, lid mounting (rim to tank)	1
18	15-054	•Rim, 16" threaded	1
19	16-203	Basket, strainer	1
20	16-100	Fitting, elbow (sight glass)	2
21	24-104	Clamp, hose #4	2
22	16-922	Tubing, 3/8 i.d.	As Req'd.
23	55-052	Washer, vinyl	2
24	15-308RG	Tank, 300 gallon	1
25	16-117	Fitting, tank (1" dfpt)	1
26	53-886	Plug, 1" npt	1
27	53-202	Nipple, t.o.e. (1" npt x 2")	1
28	52-276	Elbow, slip (1" x 45°)	1
29▼	64-581	Disc, orifice (ceramic #10)	8
30	52-270	Elbow (1/2" x 90°)	2
31	53-899	Nipple (1/2" x 4" pvc)	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

▼Optional sizes available.

All SDI Sprayer parts can be obtained directly from SDI

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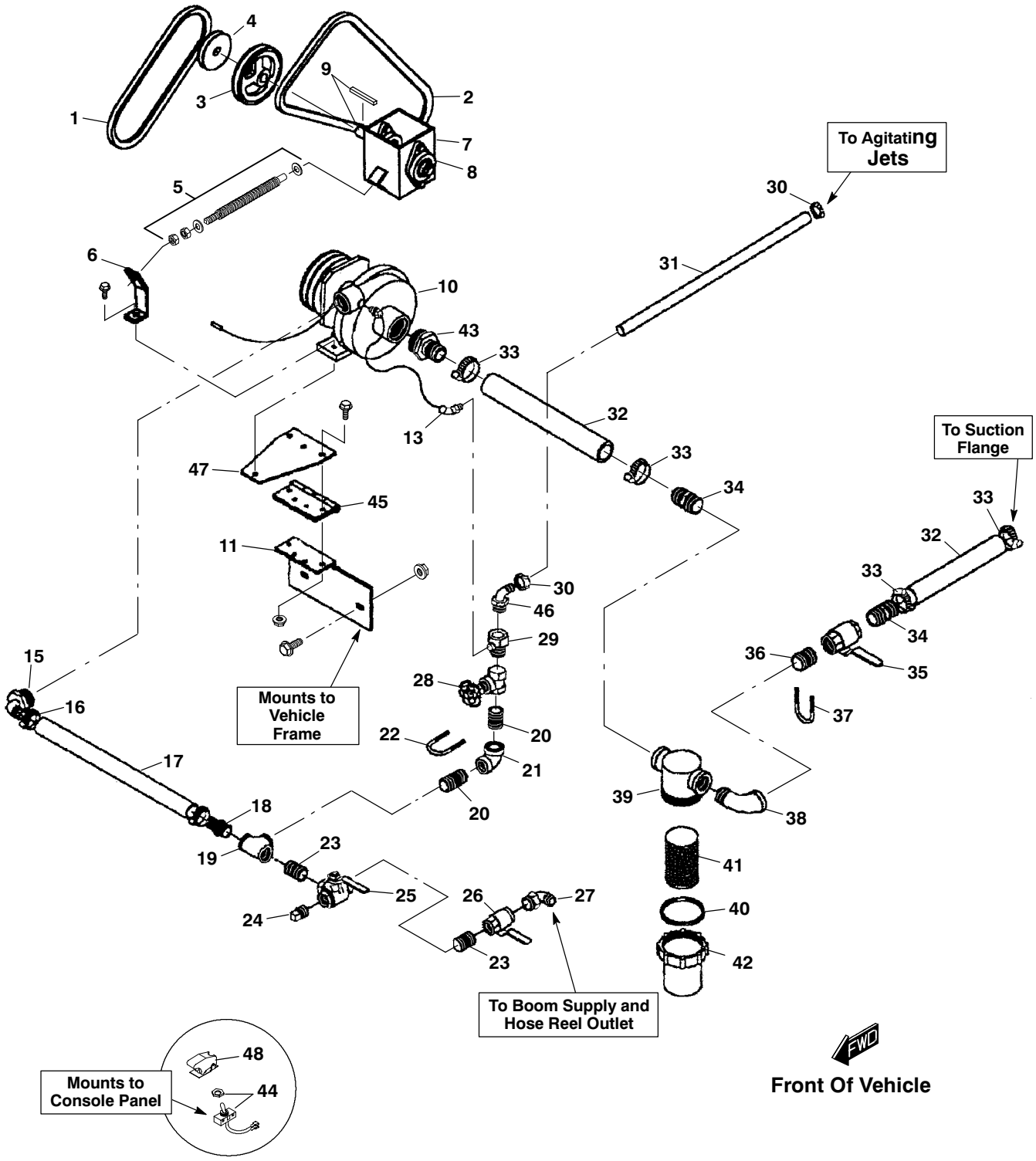
or Fax: (559) SDI-5591

SDI CENTRIFUGAL PUMP, JACK-SHAFT, HOSES and VALVES SUZUKI 970 SPRAYER



SDI CENTRIFUGAL PUMP, JACK-SHAFT, HOSES and VALVES SUZUKI 970 SPRAYER

Ref. No.	Part No.	Description	No. Req'd
1	67-028	Belt (A28)	1
2	67-050	Belt (AX48)	1
3	66-172	Pulley, 5" o.d.	1
4	66-173	Pulley, 3 1/4" o.d.	1
5	11-535	Linkage assembly	1
6	11-541	Bracket, linkage mounting	1
7	11-540	Bracket, jack-shaft mounting	1
8	68-175	Bearing, flange (3/4")	2
9	63-108	Jack-shaft (3/4" x 8" w/ 3" keyway)	1
	46-033	•Key, shaft (3/16 x 3/16 x 3)	1
10	19-230	Pump, centrifugal (w/12v clutch)	1
11	11-553	Mount, pump (hinged)	1
12	56-510	Fitting, tube (1/8 mpt x 5/32 o.d.)	1
13	49-108	Fitting, elbow (1/8 mpt x 5/32 o.d.)	1
14	49-532	Tubing, nylon	As Req'd.
15	52-123	Adapter, elbow (1 1/4 mpt x 3/4 hb)	1
16	24-112	Clamp, hose (#12)	2
17	21-930	Hose (3/4 i.d. x 200 psi)	As Req'd.
18	53-134	Adapter (3/4 mpt x 3/4 hb)	1
19	50-520SS	Tee, 3/4 npt, SS	1
20	51-502SS	Nipple, 3/4 mpt x 2, SS	2
21	50-511SS	Elbow, 3/4 fpt x 90° SS	1
22	47-103	U-bolt, 1/4"	1
23	51-501SS	Nipple, close 3/4 npt, SS	2
24	50-580SS	Plug, 3/4 npt, SS	1
25	60-324-3	Valve, 3-way ball (3/4" npt)	1
26	60-324	Valve, ball 3/4 npt	1
27	52-112	Adapter, elbow (3/4 mpt x 4/3 hb)	1
28	60-203	Valve, gate 3/4 npt	1
29	56-2152	Adapter (3/4 mpt x 3/4 fpt)	1
30	24-106	Clamp, hose (#6)	1
31	82-500	Hose (1/2" x 300 psi)	As Req'd.
32	21-932	Hose, suction (1 1/4 i.d.)	As Req'd.
33	24-120	Clamp, hose (#20)	4
34	53-436	Adapter (1" mpt x 1 1/4 hb)	2
35	60-325	Valve, ball (1" npt)	1
36	51-601SS	Nipple, close (1" npt, SS)	1
37	47-205	U-bolt, 5/16	1
38	50-610SS	Elbow, street (1" x 90°, SS)	1
39	57-115	Body, 1" npt	1
40	57-116	Gasket	1
41	57-118	Screen, 40 mesh	1
42	57-117S	Bowl, poly	1
43	53-443	Adapter (1 1/2 mpt x 1 1/4 hb)	1
44	72-125	Switch, pump clutch	1
45	69-100	Hinge, pump mount	1
46	52-113	Adapter, elbow (3/4 mpt x 1/2 hb)	1
47	11-557	Plate, hinge mounting	1
48	72-121	Cover, switch	1

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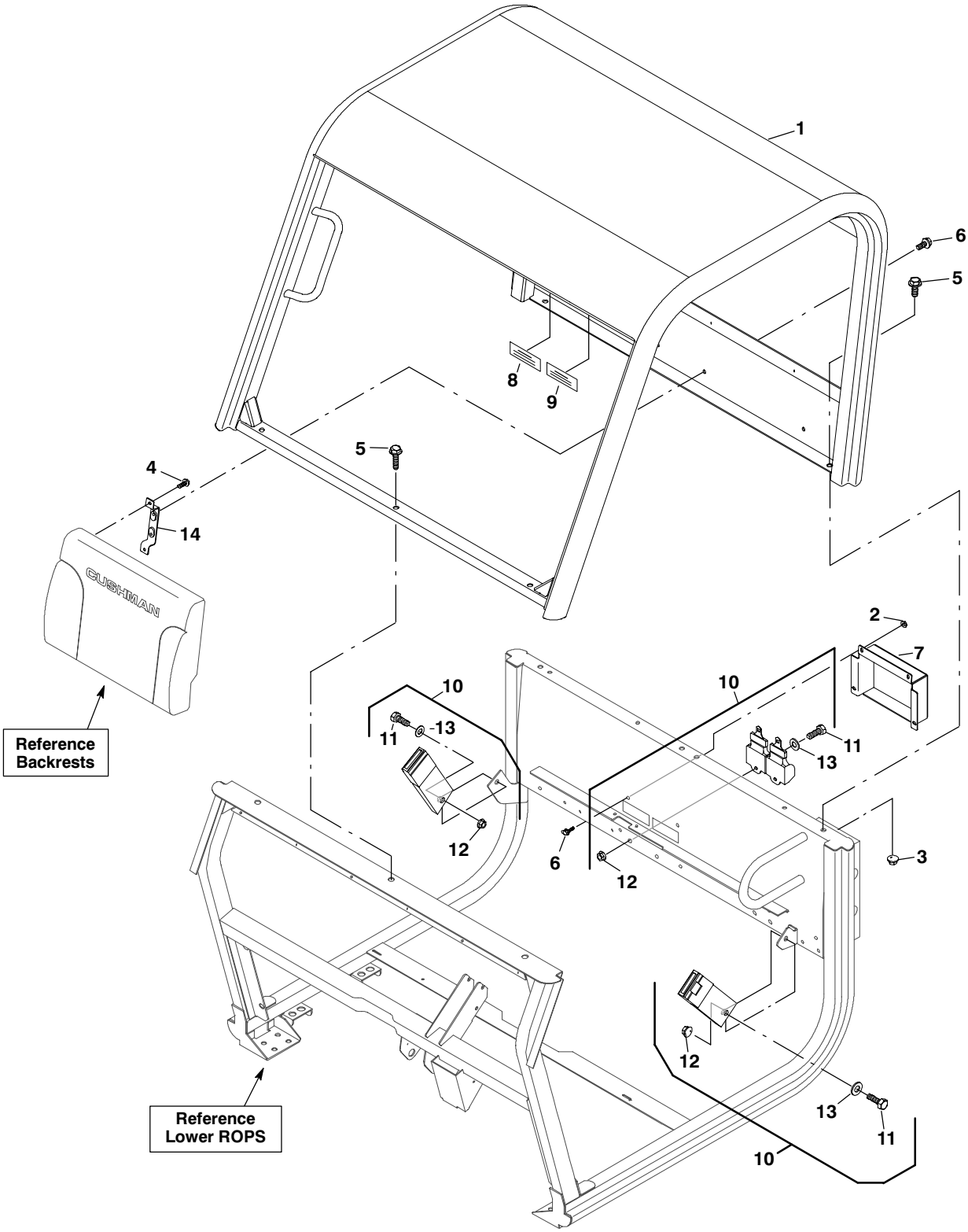
All SDI Sprayer parts can be obtained directly from SDI

Phone: (559) SDI-5555

or Fax: (559) SDI-5591

UPPER ROPS ACCESSORY, PART NUMBER 894761
ALSO MOD NO. 53715 and INCLUDED WITH CAB SET, MOD NO. 53721
FOR USE ON
SUZUKI 970 SPRAYER



UPPER ROPS ACCESSORY, PART NUMBER 894761
ALSO MOD NO. 53715 and INCLUDED WITH CAB SET, MOD NO. 53721
FOR USE ON
SUZUKI 970 SPRAYER

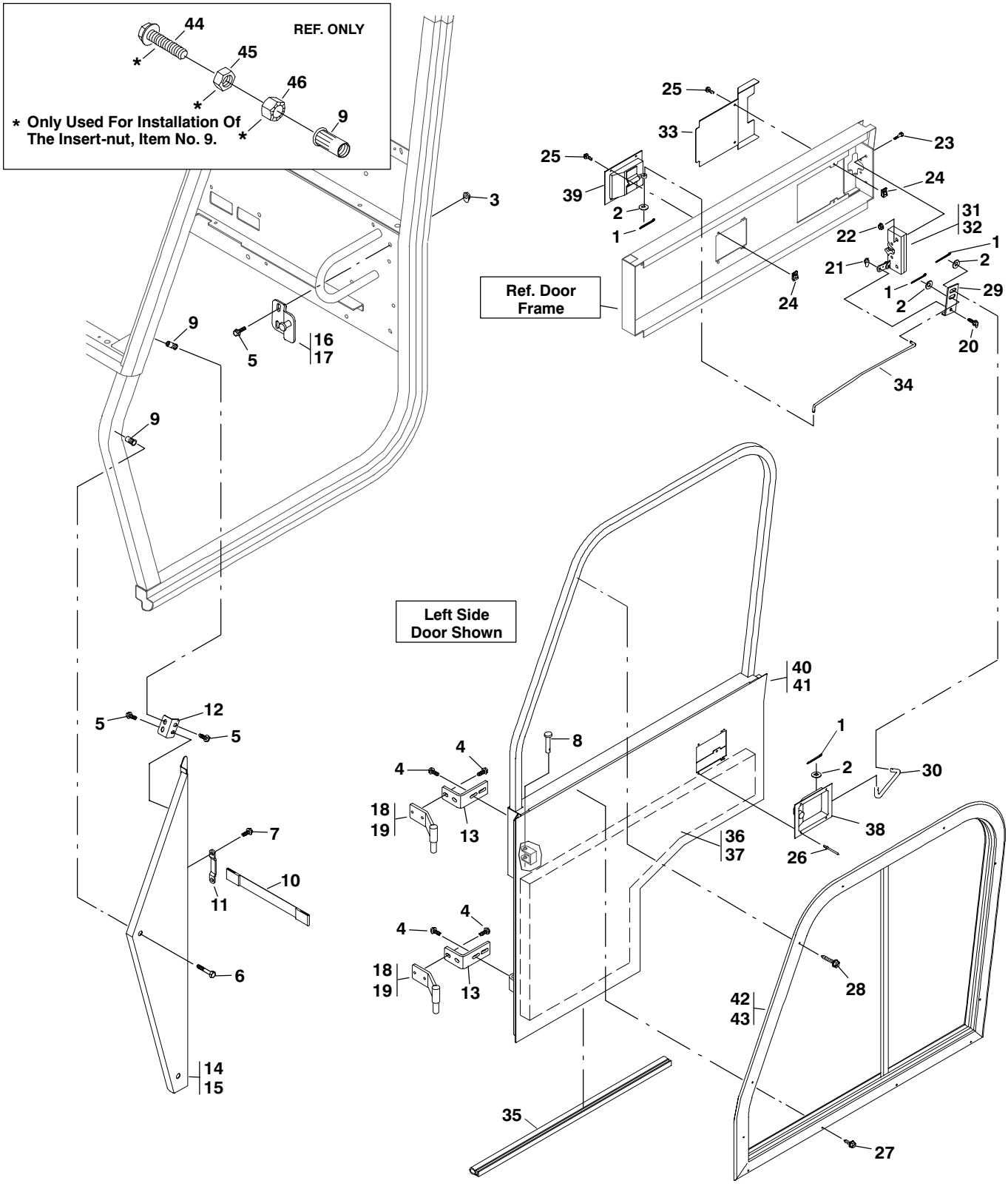
Ref. No.	Part No.	Description	No. Req'd
1	894761	ROPS, upper accessory	1
2	450453	•Nut, M8-1.25 (10.9)	4
3	450455	•Nut, M12-1.75 (10.9)	3
4	450541	•Screw, M6-1 x 16 (4.8)	8
5	452411	•Screw, M12-1.75 x 40 (8.8)	6
6	800930	•Screw, M8-1.25 x 16 (8.8)	12
7	841799	•Guard, seat belt	1
8	844356	•Decal, ROPS warning	1
9	844552	•Decal, ROPS certification	1
10	889074	•Belt, seat (retractable)	2
11	311763	••Screw, 1/2-20 x 1 1/4	2
12	800559	••Nut, 1/2-20 flange, crown lock	2
13	831783	••Washer, 1/2	2
14	893632	•Support, backrest	4

•INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

WARNING

- **Seat belts *MUST BE* installed with the ROPS upper frame.**

STEEL DOOR ACCESSORIES
PART NO'S. 894755 (GREEN, LEFT SIDE), 894756 (GREEN, RIGHT SIDE)
also MOD NO. 53722
FOR SUZUKI 970 SPRAYER,
WHEN USING THE UPPER ROPS ACCESSORY



STEEL DOOR ACCESSORIES
PART NO'S. 894755 (GREEN, LEFT SIDE), 894756 (GREEN, RIGHT SIDE)
also MOD NO. 53722
FOR SUZUKI 970 SPRAYER,
WHEN USING THE UPPER ROPS ACCESSORY

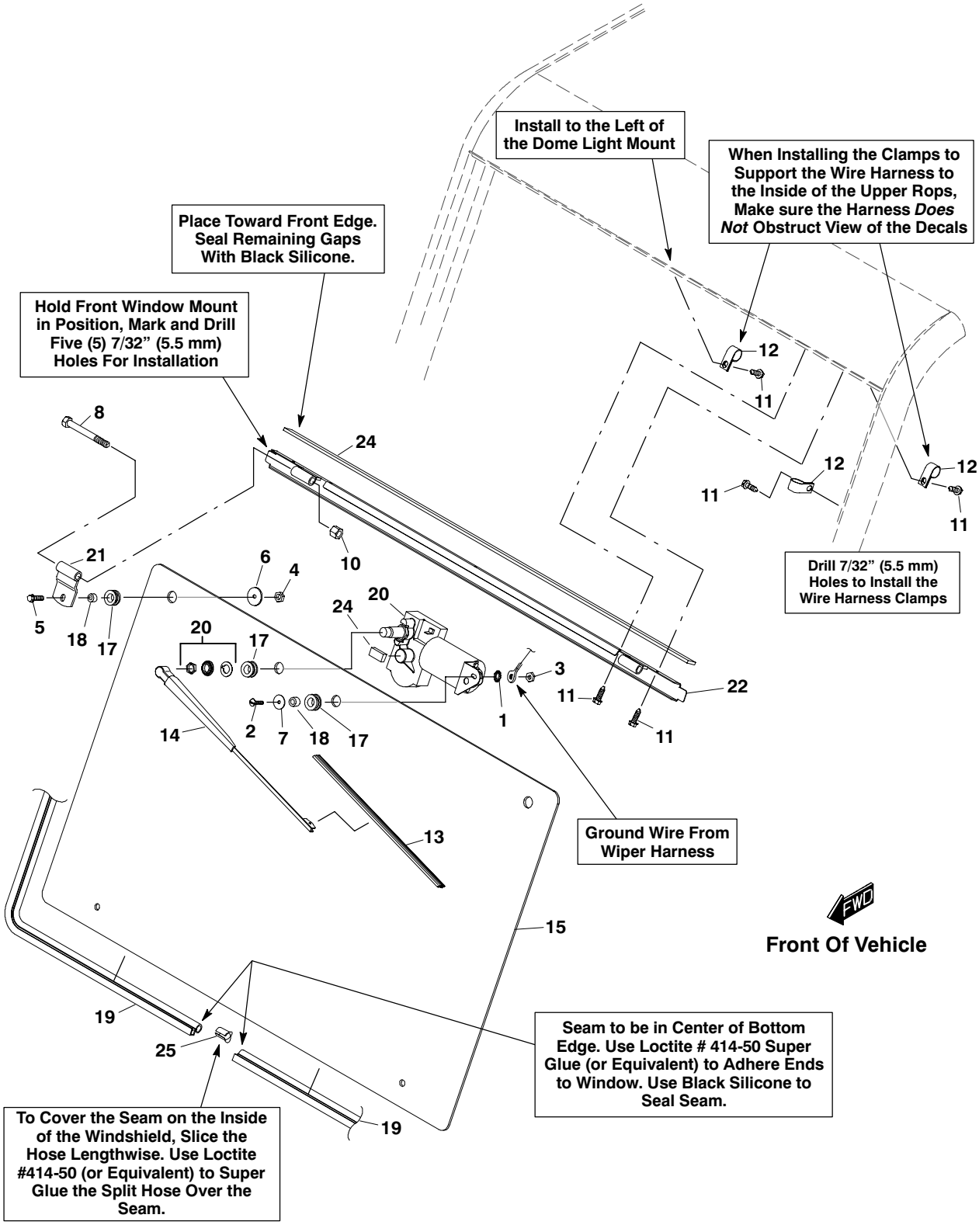
Ref. No.	Part No.	Description	No. Req'd
	894755	Door, steel (left, green)	1
	894756	Door, steel (right, green)	1
1	306463	•Pin, cotter 1/16 x1/2"	4
2	308089	•Washer, #10	4
3	450454	•Nut, M10-1.5 (10.9) (left side)	2
	450454	•Nut, M10-1.5 (10.9) (right side)	3
4	452388	•Screw, M8-1.25 x 20 (8.8)	8
5	452398	•Screw, M10-1.5 x 20 (8.8) (left)	4
	452398	•Screw, M10-1.5 x 20 (8.8) (right)	5
6	452402	•Screw, M10-1.5 x 50 (8.8)	2
7	452695	•Screw, tapping M6-1 x 20	2
8	516634	•Pin, clevis, 3/8 x 1 3/4	1
9	800961	•Nut, insert, M10 x 1 1/2	3
10	825823	•Strap	1
11	829038	•Bracket, strap	1
12	844443	•Mount, door support	1
13	844697	•Bracket, door mount	2
14	894793	•Support, door (Left)	1
15	894794	•Support, door (Right)	1
16	894802	•Striker, door (Left)	1
17	894803	•Striker, door (Right)	1
18	894830	•Bracket, door pivot (Left)	2
19	894831	•Bracket, door pivot (Right)	2
	▼	•Door, complete right	1
	▼	•Door, complete left	1
20	548900	••Screw, #10-24 (G5)	1
21	800053	••Nut, center lock, #10-24	1
22	800059	••Nut, center lock, 1/4-20	4
23	800263	••Screw, 1/4-20 x 1 1/4 (G5)	4
24	800339	••Nut, speed, #10A	6
25	800344	••Screw, tapping, #10 x 5/8	6
26	800483	••Rivet, pop, 3/16 x 5/8	4
27	800965	••Screw, tapping, 12-14 x 3/4	4
28	800966	••Screw, tapping, 12-14 x 1 3/4	7
29	828697	••Arm	1
30	837960	••Rod, short	1
31	842463	••Latch, door, (Left)	1
32	842464	••Latch, door, (Right)	1
33	844707	••Cover, door	1
34	844782	••Rod, inside door release	1
35	844945	••Seal, door trim	As Req'd
36	844986	••Foam, 1" perforated (Left)	1
37	844987	••Foam, 1" perforated (Right)	1
38	885927	••Handle, paddle w/key	1
39	885928	••Handle, paddle	1
40	894797	••Door, frame (Left)	1
41	894798	••Door, frame (Right)	1
42	894799	••Window, door (Left)	1
43	894800	••Window, door (Right)	1
44 *	450220	Screw, M10-1.5 x 55 (8.8)	1
45 *	450325	Nut, M10-1.5	1
46 *	845022	Tool, M10 insert-nut installation	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Only used for the insertion of the insert-nut.

▼ Not Offered.

WINDSHIELD WITH WIPER ACCESSORY, PART NO. 894757
also INCLUDED WITH CAB SET, MOD NO. 53721
FOR USE ON SUZUKI 970 SPRAYER
WHEN USING THE UPPER ROPS ACCESSORY


Install to the Left of the Dome Light Mount
When Installing the Clamps to Support the Wire Harness to the Inside of the Upper Rops, Make sure the Harness *Does Not* Obstruct View of the Decals
Place Toward Front Edge. Seal Remaining Gaps With Black Silicone.
Hold Front Window Mount in Position, Mark and Drill Five (5) 7/32" (5.5 mm) Holes For Installation
Drill 7/32" (5.5 mm) Holes to Install the Wire Harness Clamps
Ground Wire From Wiper Harness
FWD
Front Of Vehicle
Seam to be in Center of Bottom Edge. Use Loctite # 414-50 Super Glue (or Equivalent) to Adhere Ends to Window. Use Black Silicone to Seal Seam.
To Cover the Seam on the Inside of the Windshield, Slice the Hose Lengthwise. Use Loctite #414-50 (or Equivalent) to Super Glue the Split Hose Over the Seam.
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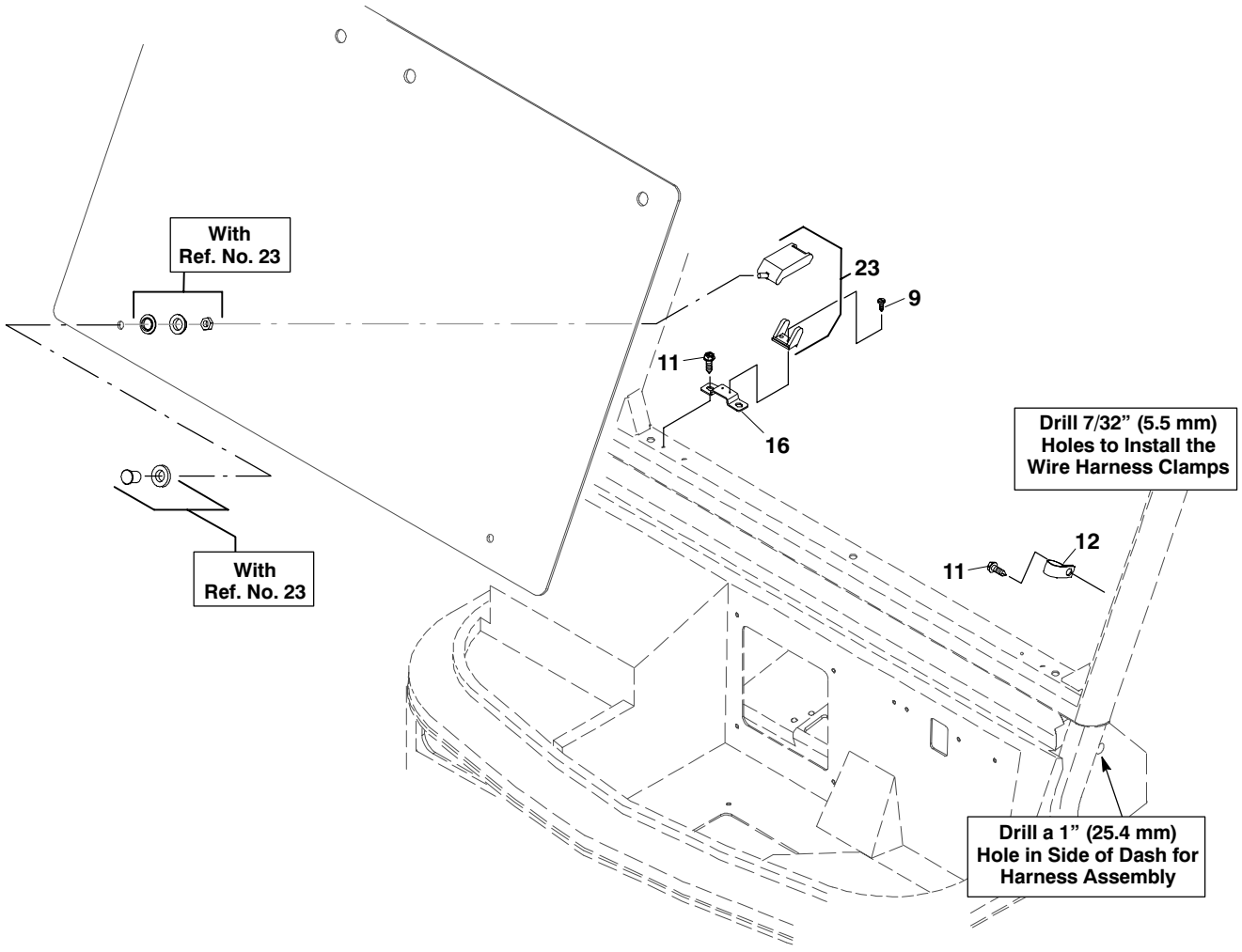
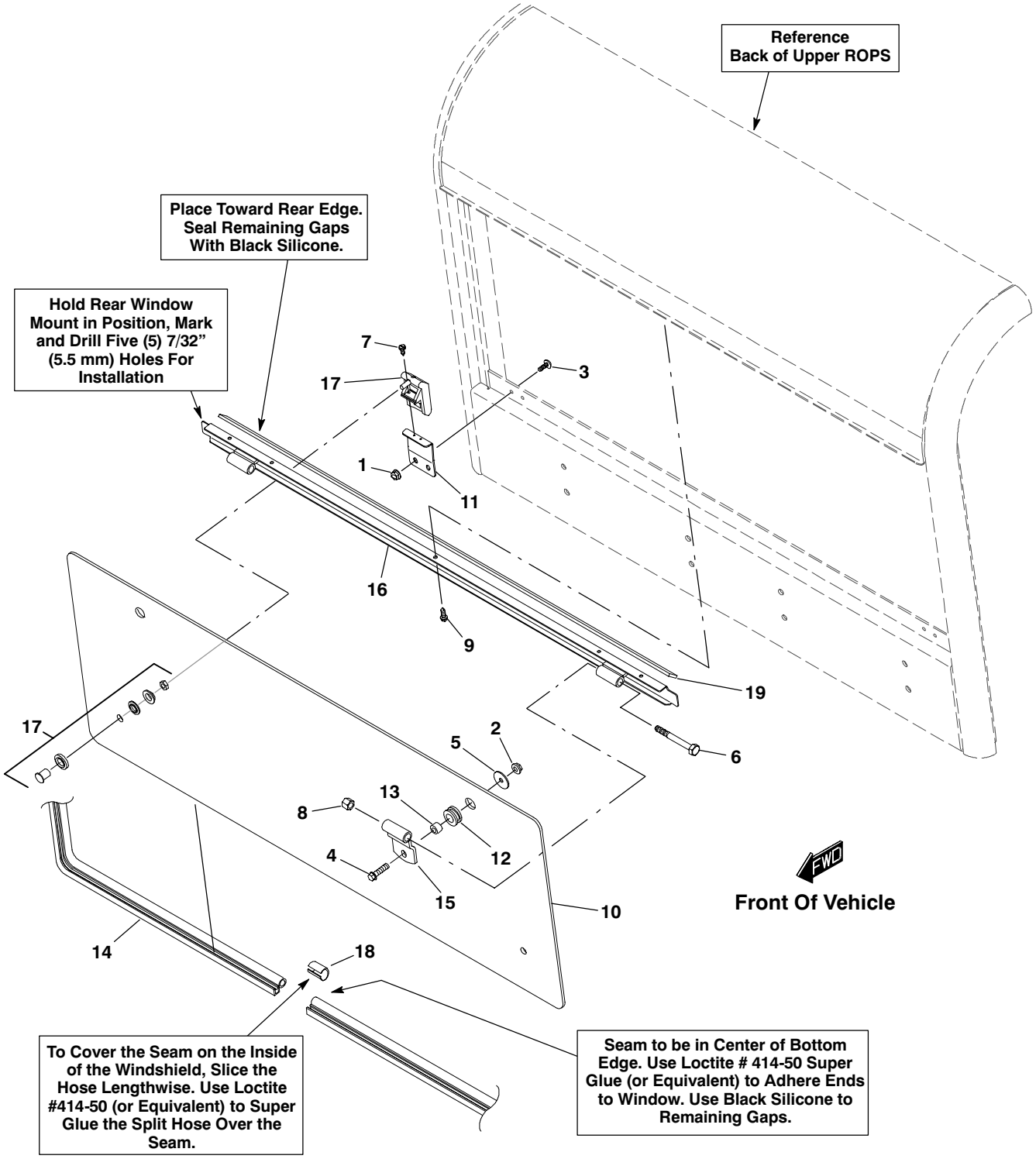
WINDSHIELD WITH WIPER ACCESSORY, PART NO. 894757
also INCLUDED WITH CAB SET, MOD NO. 53721
FOR USE ON SUZUKI 970 SPRAYER
WHEN USING THE UPPER ROPS ACCESSORY



Ref. No.	Part No.	Description	No. Req'd
1	306998	Lockwasher, #10, shakeproof	1
2	306379	Screw, #10-24 x 1	1
3	306531	Nut, #10-24	1
4	450453	Nut, M8	2
5	452390	Bolt, M8-1.25 x 30	2
6	548159	Washer, 5/16	2
7	548178	Washer, #10	1
8	548941	Screw, 1/2-13 x 4 1/2	2
9	819195	Screw, #8–18 x 1/2, tapping	4
10	800602	Nut, 1/2-13	2
11	452692	Screw, M6-1.0 x 12, tapping	13
12	814924	Clamp	4
13	826037	Blade, windshield wiper	1
14	828682	Arm, windshield wiper	1
15	844112	Window, front	1
16	844925	Mount, front window latch	2
17	844938	Grommet	4
18	844939	Spacer,	3
19	844944	Seal, 25' (7.6 M)	As Req'd.
20	886503	Wiper motor	1
21	894739	Hinge, window	2
22	894740	Mount, front window	1
*	894804	Harness, wiper motor	1
23	894863	Latch, window	2
24	828378	Stripping (weather) 50'	As Req'd.
25	830425	Hose	As Req'd.

* Not Illustrated

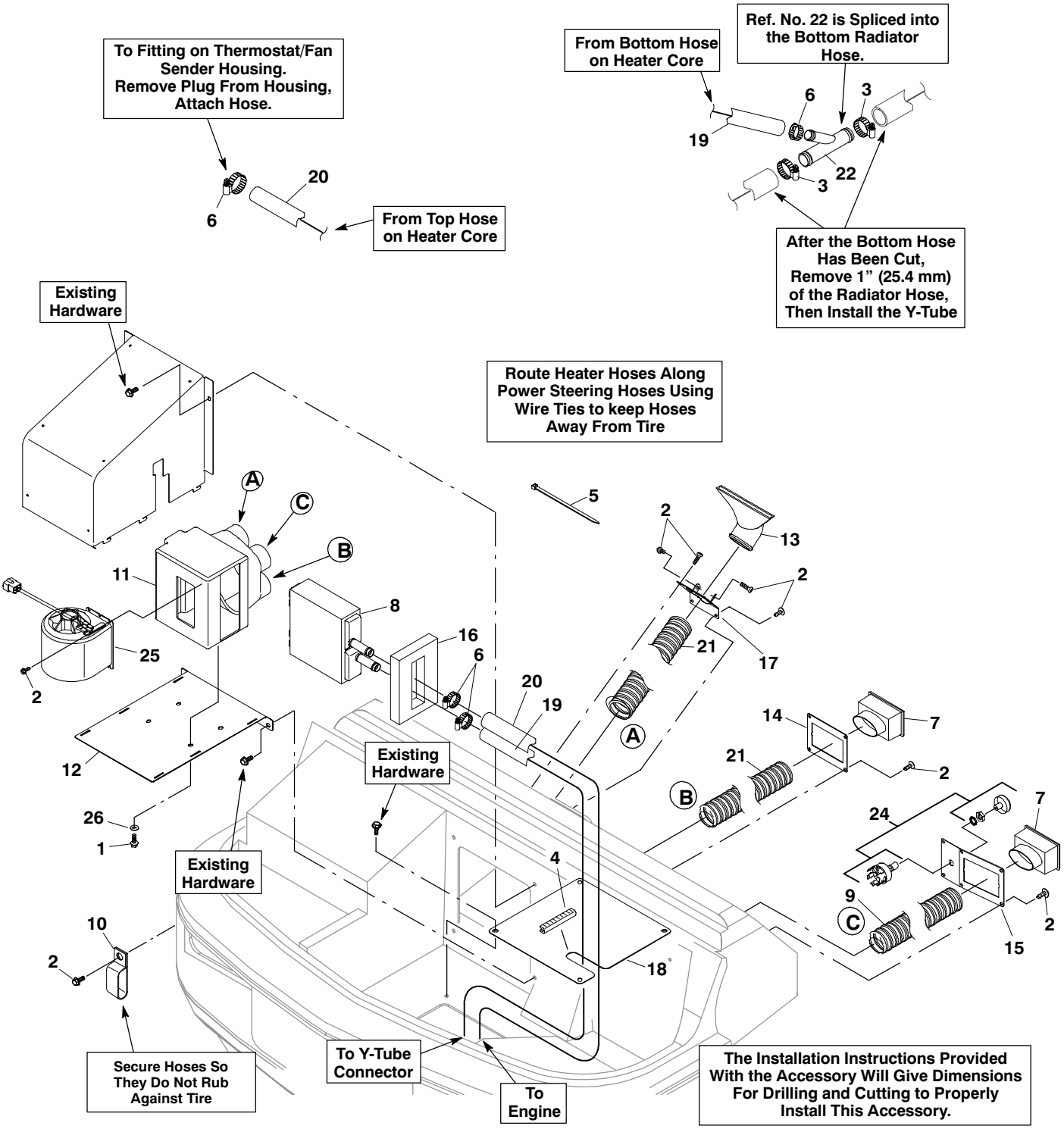
REAR WINDOW ACCESSORY, PART NO. 894758
also INCLUDED WITH CAB SET, MOD NO. 53721
FOR USE ON SUZUKI 970 SPRAYER


Reference
Back of Upper ROPS
Place Toward Rear Edge. Seal Remaining Gaps With Black Silicone.
Hold Rear Window Mount in Position, Mark and Drill Five (5) 7/32" (5.5 mm) Holes For Installation
7
17
3
1
11
16
9
19
17
2
5
6
13
8
12
4
15
10
14
18
FWD
Front Of Vehicle
To Cover the Seam on the Inside of the Windshield, Slice the Hose Lengthwise. Use Loctite #414-50 (or Equivalent) to Super Glue the Split Hose Over the Seam.
Seam to be in Center of Bottom Edge. Use Loctite # 414-50 Super Glue (or Equivalent) to Adhere Ends to Window. Use Black Silicone to Remaining Gaps.

REAR WINDOW ACCESSORY, PART NO. 894758
also INCLUDED WITH CAB SET, MOD NO. 53721
FOR USE ON SUZUKI 970 SPRAYER

Ref. No.	Part No.	Description	No. Req'd
1	450452	Nut, M6-1.00	4
2	450453	Nut, M8-1.25	2
3	450539	Screw, M6 x 12	4
4	452390	Bolt, M8-1.25	2
5	548159	Washer, 5/16	2
6	00406G4	Screw, 1/2-13 x 4 1/2	2
7	819195	Screw, #8-18 x 1/2, tapping	4
8	800602	Nut, 1/2-13	2
9	452692	Screw, M6-1.0 x 12, tapping	5
10	844113	Window, back	1
11	844926	Mount, rear window latch	2
12	844938	Grommet	2
13	844939	Spacer	2
14	7024	Seal, window	As Req'd.
15	894739	Hinge, window	2
16	894741	Mount, rear window	1
17	894863	Latch, window	2
18	7162	Hose	As Req'd.
19	828378	Stripping, weather	As Req'd.

HEATER/DEFROSTER ACCESSORY, PART NO. 894760
ALSO MOD NO. 53720 SUZUKI 970 SPRAYER


To Fitting on Thermostat/Fan Sender Housing. Remove Plug From Housing, Attach Hose.
From Top Hose on Heater Core
From Bottom Hose on Heater Core
Ref. No. 22 is Spliced into the Bottom Radiator Hose.
After the Bottom Hose Has Been Cut, Remove 1" (25.4 mm) of the Radiator Hose, Then Install the Y-Tube
Existing Hardware
Route Heater Hoses Along Power Steering Hoses Using Wire Ties to keep Hoses Away From Tire
Existing Hardware
Existing Hardware
Secure Hoses So They Do Not Rub Against Tire
To Y-Tube Connector
To Engine
The Installation Instructions Provided With the Accessory Will Give Dimensions For Drilling and Cutting to Properly Install This Accessory.

HEATER/DEFROSTER ACCESSORY, PART NO. 894760
ALSO MOD NO. 53720 SUZUKI 970 SPRAYER

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	800934	Screw, M6-1 x 16	4	15	844789	Mount, air louver & switch	1
2	800943	Screw, 10-14 x 5/8, tapping	20	16	844827	Insulation, heater housing	1
3	820889	Clamp	2	17	844889	Bracket, defrost mount	1
4	7156	Trim, push-on	As Req'd.	18	844894	Plate, access w/heater	1
5	823549	Tie, cable 15.5" (394 mm)	9	19	845126	Hose, heater, 80" (2 M)	1
6	832033	Clamp	4	20	845127	Hose, heater, 104" (2.6 M)	1
7	833846	Louver, air	2	21	844942	Hose, air (heater/defrost)	2
8	833949	Core, heater	1	22	888856	Tube, "Y"	1
9	834217	Hose, air (heater/defrost)	1	23	894544	Cover, heater	1
10	833853	Clamp	1	24	894801	Switch, heater, 3 speed	1
11	844115	Housing, heater core	1	25	894805	Fan, heater	1
12	844161	Panel, heater base	1	*	894806	Harness, heater fan	1
13	844327	Duct, defroster	1	26	450389	Washer, M6	4
14	844788	Mount, air louver	1				

* Not Illustrated

CAB SET, MOD NO. 53721
FOR USE ON
SUZUKI 970 SPRAYER

The Cab Set (Mod No. 53721) is actually a combination of the following accessories:

UPPER ROPS ACCESSORY, Part No. 894761 - see page 126
WINDSHIELD W/WIPER ACCESSORY, Part No. 894757 - see page 130
REAR WINDOW ACCESSORY, Part No. 894758 - see page 132

Also available for use with the Cab Set are the:

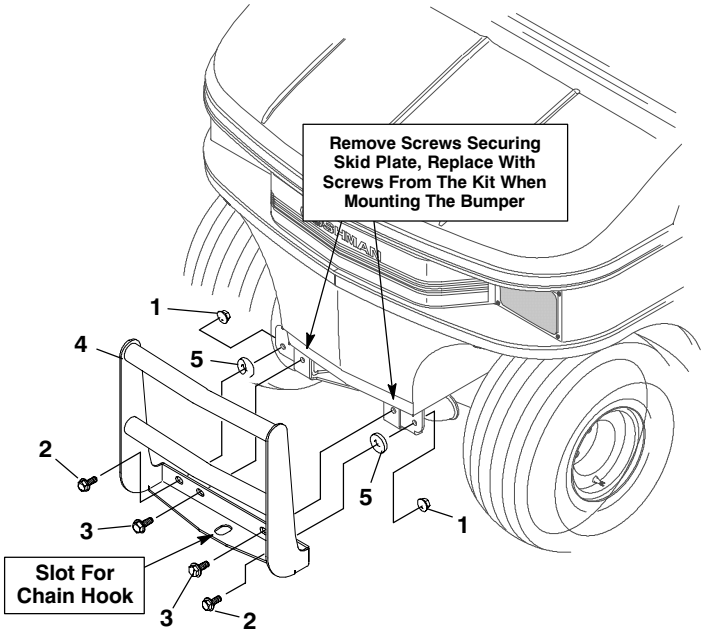
STEEL DOOR ACCESSORIES,
Part No. 894755 (Green, Left Side) - see page 128
Part No. 894756 (Green, Right Side) - see page 128

FRONT BUMPER ACCESSORY PART NO. 894778
SUZUKI 970 SPRAYER

WARNING

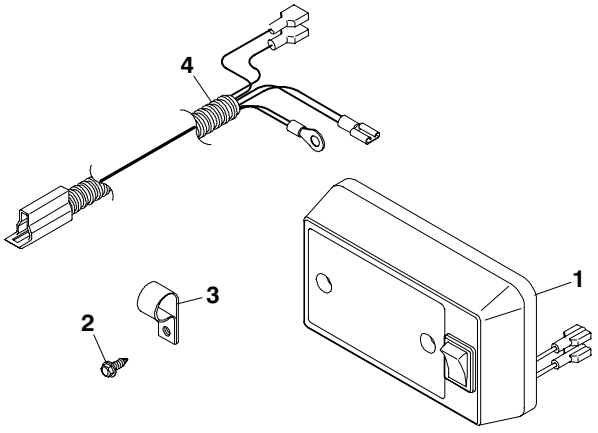
- **Keep bystanders away from the chain (or tow rope) when pulling or towing an object. Serious injury may result if the chain or tow rope should break or become disconnected.**

- ***Do Not*** wrap or hook a chain (or tow rope) to the uprights or to the cross-tubes of the bumper for the purpose of towing.
- When using the front bumper to tow or pull an object with a chain, ***always*** attach the chain (or tow rope) hook into the slot located at the bottom of the bumper. Failure to do so may result in damage to the bumper and/or suspension frame.



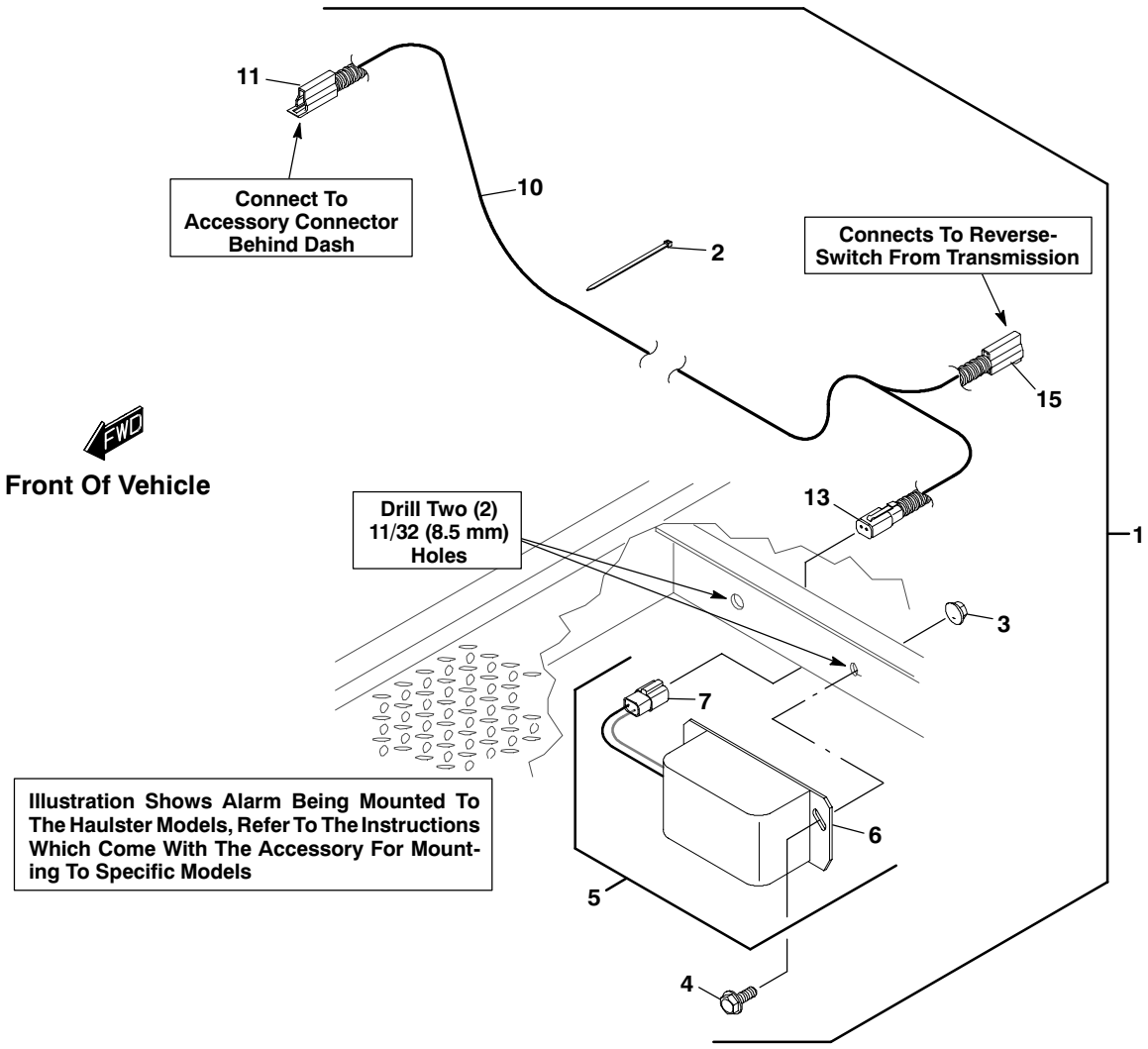
Ref. No.	Part No.	Description	No. Req'd.
1	450454	Nut, M10-1.50 flange (10.9)	2
2	452399	Screw, M10-1.50 x 25 flange (8.8)	2
3	452410	Screw, M12-1.75 x 30 flange (8.8)	2
4	894878	Bumper, front	1
5	809180	Washer (1 1/8" diameter)	2

DOME LIGHT, MOD NO. 53728
SUZUKI 970 SPRAYER



Ref No.	Part No.	Description	No. Req'd.
	53728	Mod, dome light	1
1	182399	Light, dome	1
2	800965	Screw, #12-14 x 3/4	2
3	814924	Clamp	2
4	894804	Harness, wiper/dome light	1

BACK-UP ALARM ACCESSORY PART NO. 894811
SUZUKI 970 SPRAYER



Ref. No.	Part No.	Description	No. Req'd.	Ref. No.	Part No.	Description	No. Req'd.
1	894811	Accessory, back-up alarm	1	9*	839935	••Lock, 2-wire receptacle	1
2	320107	•Tie, wire, 7.5" (190.5 mm)	2	10	894815	•Harness, back-up alarm	1
3	800697	•Nut, 5/16-18, flange crownlock	2	11	826006	••Connector, 2-contact female	1
4	800710	•Screw, 5/16-18 x 1 flange head	2	12*	825886	••Terminal, 1/4 L-male	2
5	894814	•Alarm assembly, back-up	1	13	839917	••Plug, 2-wire	1
6	834229	••Alarm, back-up	1	14*	838769	••Terminal, socket	2
7	839918	••Receptacle, 2-wire	1	15	844815	••Connector, 2-contact	1
8*	524358	••Terminal, male pin	2	16*	839921	••Lock, 2-wire plug	1

• INDENTED PARTS NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated

TORQUE SPECIFICATIONS
HEX HEAD CAP SCREWS

The torque values shown should be used as a general guideline when specific torque values are not given.
Note the minimum grade for the U.S. standard bolt is ***grade 5.***

U.S. Standard Hardware

Grade	**Shank Size** (Diameter in inches, fine or coarse thread)														
		1/4	**5/16**	**3/8**	**7/16**	**1/2**	**9/16**	**5/8**	**3/4**	**7/8**	**1**	**1 1/8**			
SAE grade 5*	ft.-lbs.	9	18	31	50	75	110	150	250	378	583	782			
	N·m	12	24	42	68	102	150	203	339	513	790	1060			
SAE grade 8**	ft.-lbs.	13	28	46	75	115	165	225	370	591	893	1410			
	N·m	18	38	62	108	156	224	305	502	801	1211	1912			
Flangelock Screw w/ Flangelock Nut	ft.-lbs.		24	40											
	N·m		33	54											

* Grade 5 marking – ***Minimum*** **commercial quality** (Lower quality not recommended).

** Grade 8 marking –

Metric Standard Hardware

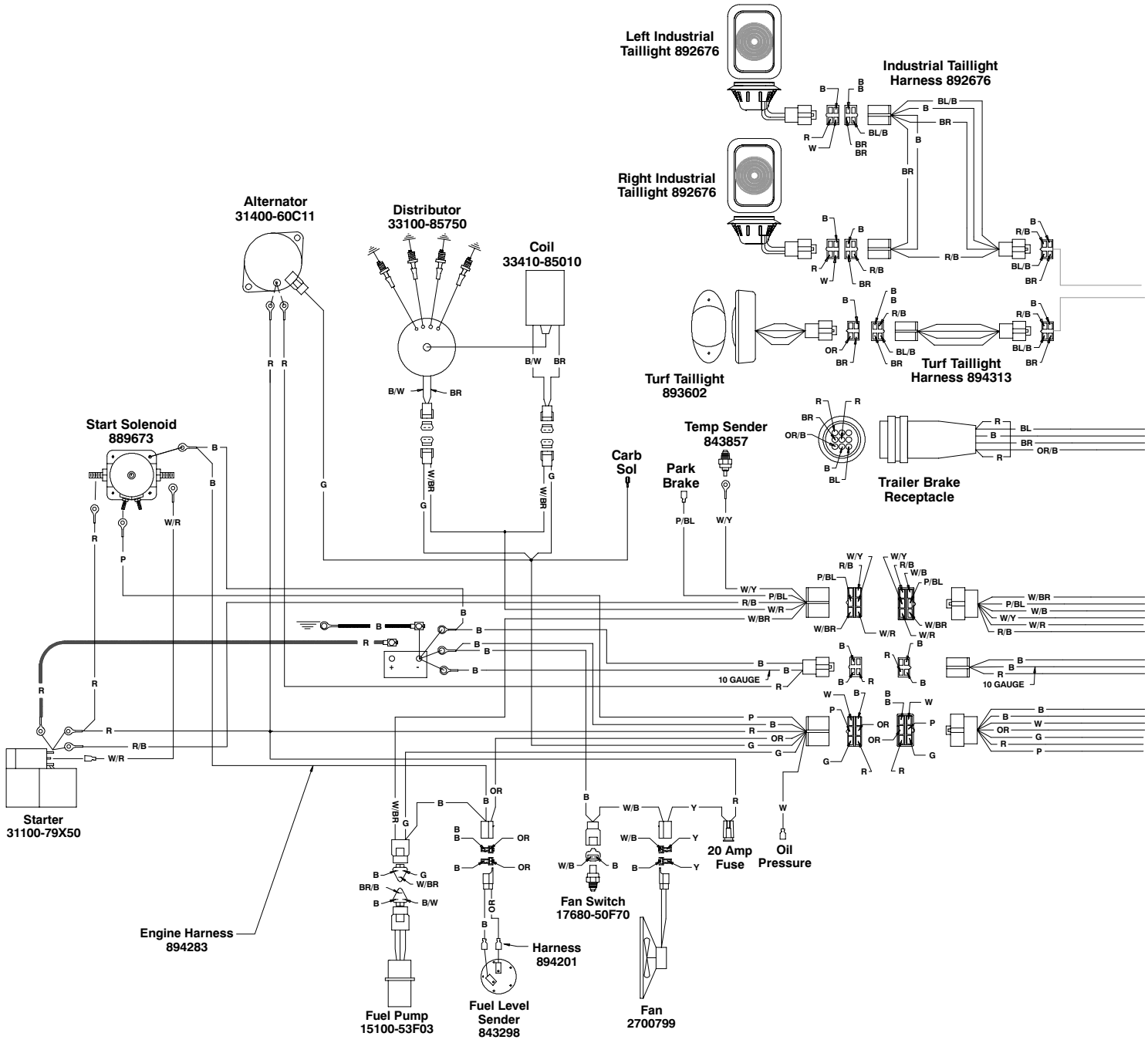
Grade	**Shank Size** (Diameter in millimeters, fine or coarse thread)														
		M4	**M5**	**M6**	**M7**	**M8**	**M10**	**M12**	**M14**	**M16**	**M18**	**M20**	**M22**	**M24**	**M27**
Grade 8.8*	ft.-lbs.	1.5	3	5.2	8.2	13.5	24	43.5	70.5	108	142	195	276	353	530
	N·m	2	4	7	11	18	32	58	94	144	190	260	368	470	707
Grade 10.9**	ft.-lbs.	2.2	4.5	7.5	12	18.8	35.2	62.2	100	147	202	275	390	498	747
	N·m	3	6	10	16	25	47	83	133	196	269	366	520	664	996
Grade 12.9***	ft.-lbs.	2.7	5.2	8.2	15	21.8	43.5	75	119	176	242	330	471	596	904
	N·m	3.6	7	11	20	29	58	100	159	235	323	440	628	794	1205

* Grade 8.8 marking –

** Grade 10.9 marking –

*** Grade 12.9 marking –

WIRING DIAGRAM
SUZUKI 970 TURF TRUCKSTER
MODEL 898671

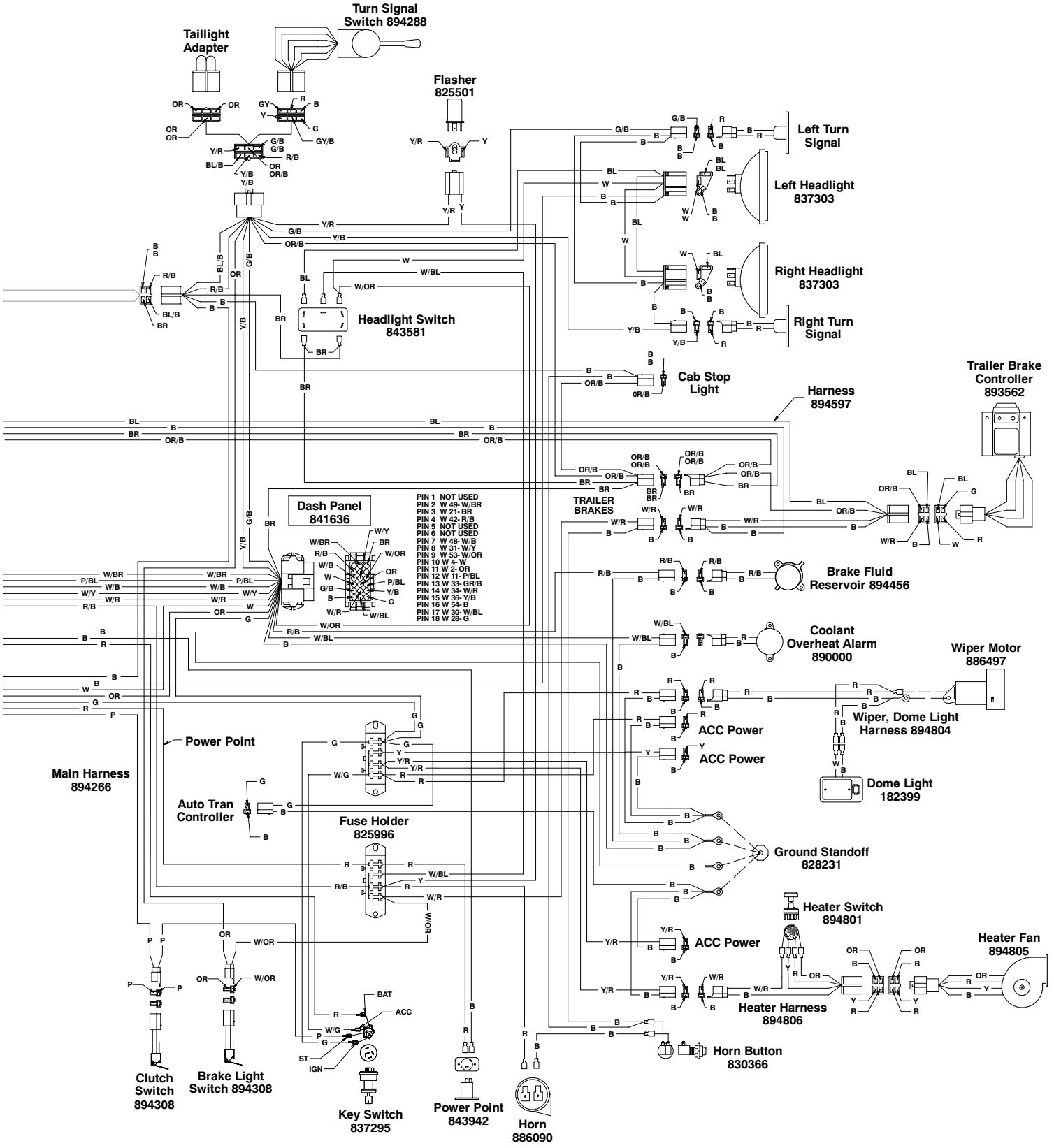


COLOR CODE:

B - BLACK	W - WHITE	W/BR - WHITE w/BROWN STRIPE
BL - BLUE	Y - YELLOW	W/G - WHITE w/GREEN STRIPE
BR - BROWN	BL/B - BLUE w/BLACK STRIPE	W/OR - WHITE w/ORANGE STRIPE
G - GREEN	G/B - GREEN w/BLACK STRIPE	W/R - WHITE w/RED STRIPE
GY - GREY	OR/B - ORANGE w/BLACK STRIPE	W/Y - WHITE w/YELLOW STRIPE
OR - ORANGE	P/BL - PURPLE w/BLUE STRIPE	Y/B - YELLOW w/BLACK STRIPE
PK - PINK	R/B - RED w/BLACK STRIPE	Y/R - YELLOW w/RED STRIPE
P - PURPLE	W/B - WHITE w/BLACK STRIPE	
R - RED	W/BL - WHITE w/BLUE STRIPE	

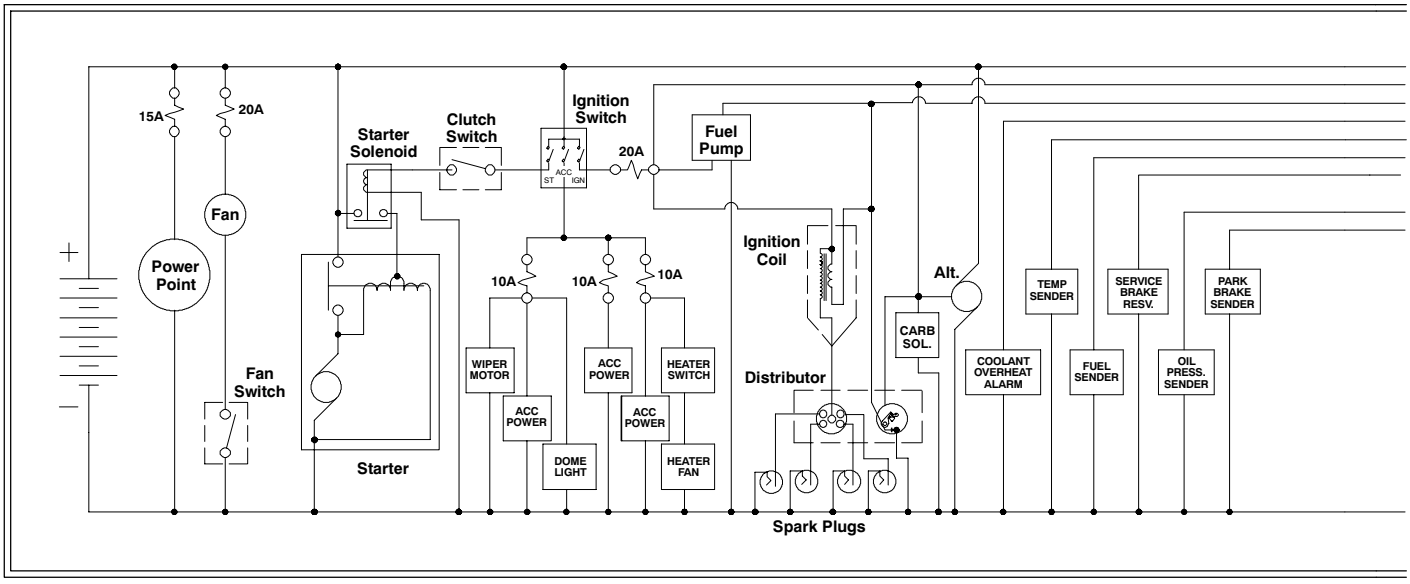
W.D. No.1

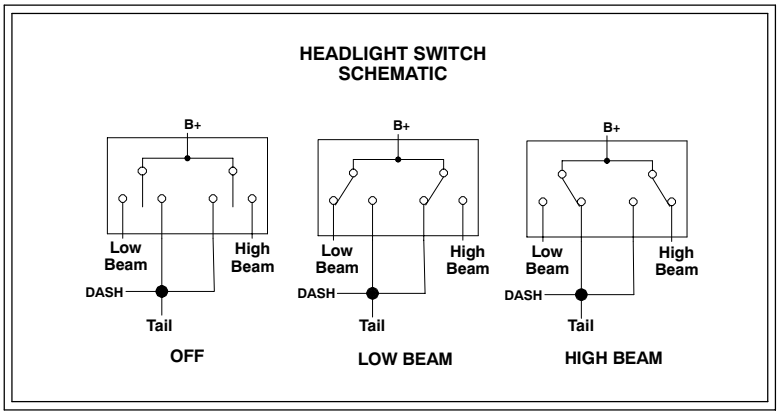
WIRING DIAGRAM (con't.)
SUZUKI 970
MODEL 898671

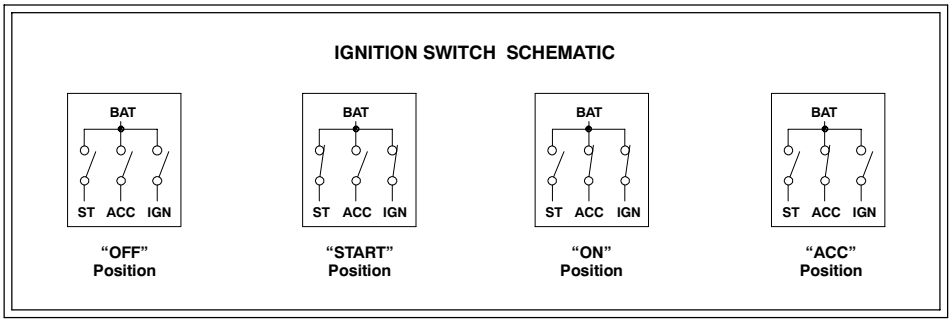


W.D. No.1

WIRING SCHEMATIC
SUZUKI 970 TURF TRUCKSTER MODEL 898671

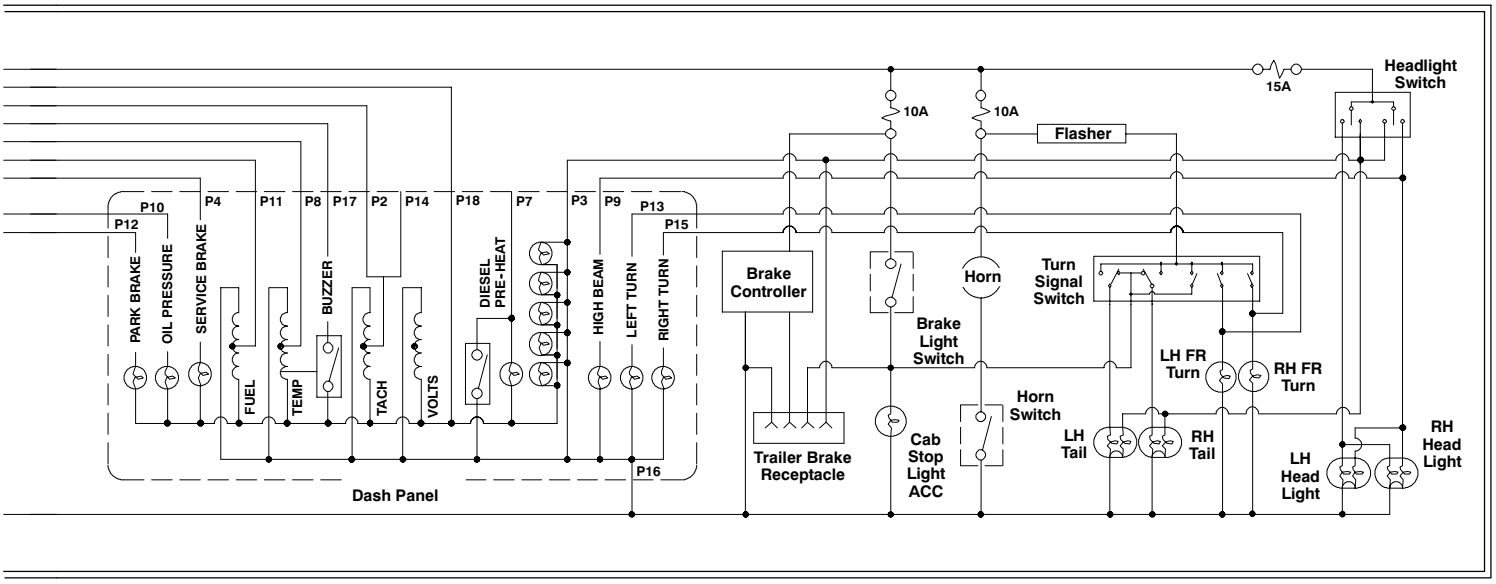


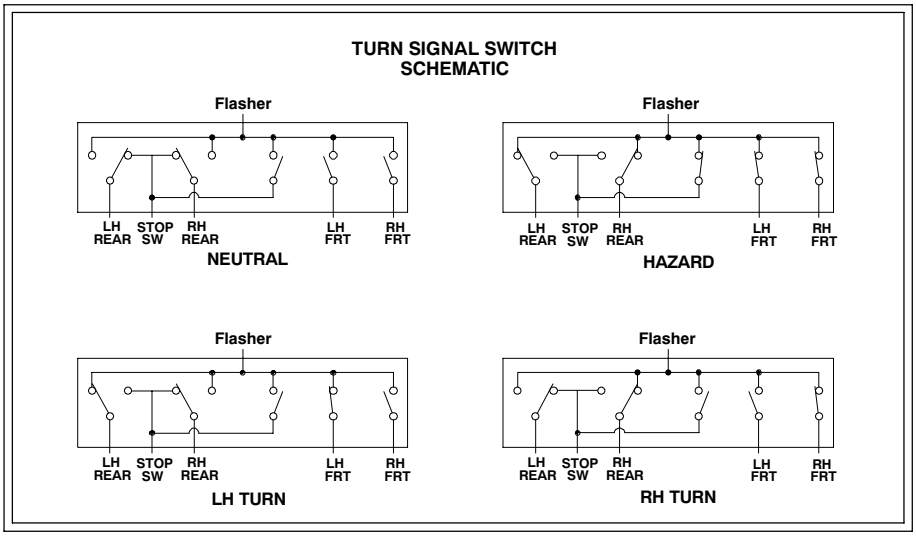




W.S. No.1

WIRING SCHEMATIC (con't.)
SUZUKI 970 MODEL 898671





W.S. No.1

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